



U.S. Department  
of Transportation

**National Highway  
Traffic Safety  
Administration**

400 Seventh Street, S.W.  
Washington, D.C. 20590

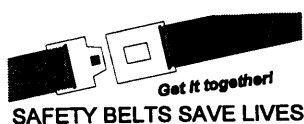
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Thank you for choosing crash data from the National Highway Traffic Safety Administration (NHTSA) for your research or other use. The information contained in this motor vehicle crash report is collected, maintained and distributed in accordance with Public Law 89-564. In accordance with this Public Law, NHTSA is required not to release any case information until completion of quality control procedures. These procedures include a review of the case material to extract all names, licenses and registration numbers, non-coded interview material, non-research related researcher comments in the margins, non-factual data, and the production number portion of the vehicle identification number (VIN).

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AUTO SAFETY HOTLINE  
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NATIONAL CAPITOL SYSTEMS, INC.

[REDACTED]

VEHICLE ACCIDENT INVESTIGATION

CASE NO. 90-08

[REDACTED], ARKANSAS

Contract No. DTNH 22-87-C-17169

Prepared for:

U.S. Department of Transportation  
National Highway Traffic Safety Administration  
Washington, D.C. 20590



NATIONAL CAPITOL SYSTEMS, INC.

VEHICLE ACCIDENT INVESTIGATION

CASE NO. 90-08

**[REDACTED]**, ARKANSAS

TECHNICAL REPORT

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1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.	
4. Title and Subtitle Vehicle Accident Investigation NCSI Case No. 90-08		5. Report Date [REDACTED] 1990	
		6. Performing Organization Code	
7. Author(s) Accident Investigation Team [REDACTED]		8. Performing Organization Report No.	
9. Performing Organization Name and Address [REDACTED]		10. Work Unit No.	
		11. Contract or Grant No. DTNH 22-87-C17169	
12. Sponsoring Agency Name and Address U.S. Department of Transportation NHTSA - National Highway Traffic Safety Administration		13. Type of Report and Period Covered Technical Report Accident Date [REDACTED]/90	
		14. Sponsoring Agency Code	
15. Supplementary Notes  1990 Chevrolet GEO Storm equipped with a Supplemental Inflatable Restraint system involved in an off-road impact with several small trees and a large tree.			
16. Abstract  See Summary (page 1)			
17. Key Words  Airbag Supplemental Inflatable Restraint		18. Distribution Statement  General Public	
19. Security Classif. (of this report)  None	20. Security Classif. (of this page)  None	21. No. of Pages  80	22. Price

TABLE OF CONTENTS

	<u>Page No.</u>
Summary	1
Accident Schematic	2
Identification	3
Ambience	3
Roadway	3
Traffic Controls	4
Vehicle	4
Vehicle Damage	4
Vehicle Velocity Estimates	5
Collision Sequence	6
Relevant Safety Issues	8
Human Factors/Occupant Data	9
Driver Data	9
Driver Injuries	10
Selected Prints	11
Slide Index	23
Appendix A: Police Accident Report	25
Appendix B: Selected NASS Forms	30
Appendix D: Airbag Supplemental Form	68
Appendix E: EDCRASH Results	75

## NCSI Case No. 90-08

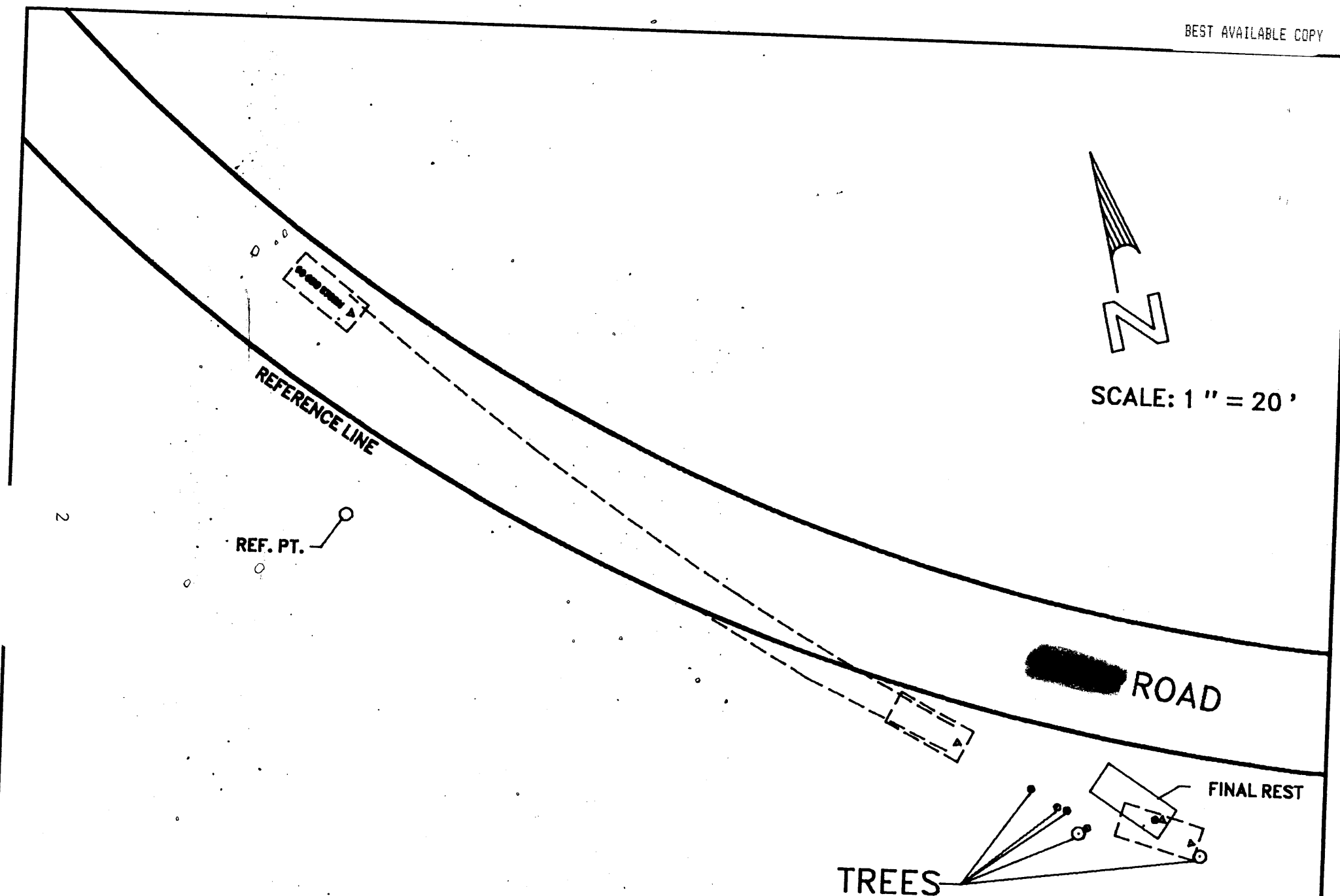
## Summary

This report is an in-depth, off-scene vehicle accident study involving a 1990 GEO Storm (equipped with a Supplemental Inflatable Restraint system) involved in an impact with a tree. The accident occurred on [REDACTED], 1990, at 2130 hours, on [REDACTED] in [REDACTED], Arkansas.

Prior to the accident, the Storm was traveling south on [REDACTED] attempting to negotiate a left hand curve. The driver of the Storm stated that as he rounded the curve two pickup trucks were heading toward him traveling side-by-side. He took evasive action by applying his brakes. Evidence at the scene indicated the left front tire of the case vehicle skidded 97.25 ft. on the roadway. The vehicle traveled 36 ft. on the roadside before impacting the first group of small trees. The front bumper impacted at least three small trees in this area with the damage distributed across the entire frontal plane of the vehicle. The vehicle continued in the same direction for approximately 10 ft. to where it contacted a large pine tree in a sideswipe impact configuration. The right side of the vehicle sideswiped the tree and was slightly redirected counter-clockwise. The Storm traveled 19 ft. from the pine tree to impact with a large oak tree. At least two additional small trees were impacted between the two large tree impacts. At impact with the oak tree the vehicle was tracking straight. The right half of the front bumper contacted the tree resulting in bumper crush of 10.75 inches. EDCRASH computed a Delta V of 13.1 mph for this impact which was sufficient to deploy the airbag module.

Following impact with the oak tree the vehicle bounced back approximately 8 ft. and rotated clockwise. In all the vehicle traveled 151 ft. from where the initial skid mark began to its final rest position. The vehicle was 13.5 ft. west of the west road edge at final rest. The vehicle was disabled and a wrecker was called to tow the vehicle to a storage facility.

The driver was not restrained by his active lap and shoulder belt system when the accident occurred. He was not injured in the crash. He was sore and stiff the next day and went to a private physician for a check-up. He credits the airbag for preventing any serious injuries in this accident.



NHTSA In-Depth Airbag Accident Investigation Case 90-08  
Accident Date: [REDACTED]-90 | Location: [REDACTED], Arkansas

NATIONAL CAPITOL  
SYSTEMS, INC.

NCSI ACCIDENT INVESTIGATION  
CASE NO. 90-08  
[REDACTED], ARKANSAS

IDENTIFICATION

Location: [REDACTED] in [REDACTED], Arkansas  
Area/Type: Urban/Wooded Area  
Accident Date/Time: [REDACTED], 1990, 2130 hours  
Notification Date/Time: [REDACTED], 1990, 0800 hours  
Accident Type: Car/Tree, Front impact  
Vehicle Occupant  
Injury Severity: No Injury (AIS-0)

AMBIENCE

Viewing Conditions: Dark  
Weather: No adverse conditions  
Precipitation: None  
Road Surface: Dry

ROADWAY

Location: [REDACTED] Road  
Type: Local Road  
Traffic Density: Light  
Width: 19 feet 6 inches  
Number of Lanes: Two  
Median: None  
Shoulder: East - 6 ft. grass shoulder  
West - 6 ft. grass shoulder  
Surface: Asphalt  
Vertical Alignment: Negative (4.1 percent)

ROADWAY CONT'D

Horizontal Alignment: Curve (15.66 degree curvature)  
Super-elevation: Positive (6.8 percent)

TRAFFIC CONTROLS

Signals: None  
Signs: Curve warning sign  
Markings: No road markings  
Speed Limit: 30 miles per hour

VEHICLE

Year: 1990  
Make: Chevrolet  
Model: GEO Storm  
Body Style: Two door coupe  
VIN: J81RF236XL7\*\*\*\*\*  
Color: Silver  
Odometer: 4,586  
Transmission: Manual, floor mounted 5-speed  
transmission selector  
Active Restraints: Lap and shoulder belts in the left front  
and right front seating positions; lap  
and shoulder belts in the left rear and  
right rear seating positions  
Passive Restraints: Automatic inflatable restraint system  
for the driver's seating position  
Defects: None  
Tow Status: Towed due to damage



VEHICLE DAMAGE

## Exterior:

The frontal plane of the airbag vehicle impacted several small trees after leaving the roadway. Direct damage from the small trees was distributed across the entire front bumper cover. This damage did not result in enough crush to measure and a Collision Deformation Classification of 12-FDEW-1 was assigned to this impact.

The next significant impact was with a larger tree. The right side of the vehicle sideswiped a pine tree. Damage was noted to the right front fender, right front tire and rim, right side door, right side mirror, and right rear quarter-panel from this impact. Again measurable resultant crush was too small to measure. A Collision Deformation Classification of 12-RDAS-1 was assigned to this sideswipe damage.

Following the sideswipe the vehicle was redirected counter-clockwise into another large tree. The frontal plane impacted the tree in the most severe impact in the collision sequence. Direct impact damage was located on the right half of the front bumper. Damage was noted to the bumper, bumper cover, right headlamp assembly, hood, and right front fender. Maximum residual crush was measured at the right front corner as 10.25 inches to the bumper. The crush measurements were as follows:

C1 = 3.25"	C2 = 2.5"
C3 = 3.25"	C4 = 5.0"
C5 = 7.5"	C6 = 10.25"

A Collision Deformation Classification of 12-FZEW-2 was assigned to this tree impact.

## CDCs:

12-FDEW-1 (Several small trees)  
12-RDAS-1 (Large tree)  
12-FZEW-2 (Large tree)

## Repair Cost:

Unknown

**Interior:**

The interior of the airbag vehicle sustained minor damage as a result of the airbag deployment. The steering wheel module cover separated at the designated perforations. No other damage to the airbag occurred. No occupant contact points were noted and no other interior damage occurred.

**VEHICLE VELOCITY ESTIMATES**

The barrier mode of the EDCRASH program was used to compute a change in velocity (Delta V) for the airbag vehicle's frontal impact with the large tree. The impacts with the smaller trees and the sideswipe impact are outside the scope of CRASH and were not calculated. The results of the computer generated Delta V for the deployment impact with the tree are as follows:

Total Delta V: 13.1 mph

Longitudinal Delta V: -13.1 mph

Lateral Delta V: 0.0 mph

**COLLISION SEQUENCE****Pre-Impact:**

At approximately 2130 hours on [REDACTED], 1990, the GEO Storm was traveling south on [REDACTED] Road in [REDACTED] Arkansas. The driver was returning home from visiting a friend. In this vicinity the roadway curves to the drivers left with a degree of curvature of 15.7 degrees and a super-elevation of 6.8 percent. The road has a negative grade of 4.1 percent along the vehicle's path of travel. The roadway is a two lane unmarked road with a statutory speed limit of 30 miles per hour. The road was dry and the weather was clear at the time.

According to the driver, as he rounded the curve two vehicles were approaching from the opposite direction, traveling side-by-side. He applied his brakes and lost control of his vehicle and traveled off the right side of the roadway.

**Impact:**

Evidence at the scene indicates the left front tire of the case vehicle skidded 97.25 ft. on the roadway. The vehicle traveled 36 ft. on the roadside before impacting the first group of small trees. The front bumper impacted at least three small trees in this area with the damage distributed across the entire frontal plane of the vehicle.

The vehicle continued in the same direction for approximately 10 ft. to where it contacted a large pine tree in a sideswipe impact configuration. The right side of the vehicle sideswiped the tree and was slightly redirected counter-clockwise.

The Storm traveled 19 ft. from the pine tree to impact with a large oak tree. At least two additional small trees were impacted between the two large tree impacts. At impact with the oak tree the vehicle was tracking straight. The right half of the front bumper contacted the tree resulting in bumper crush of 10.75 inches. EDCRASH computed a Delta V of 13.1 mph for this impact which was sufficient to deploy the airbag module.

**Post-Impact:**

Following impact with the oak tree the vehicle bounced back approximately 8 ft. and rotated clockwise. In all the vehicle traveled 151 ft. from where the initial skid mark began to its final rest position. The vehicle was 13.5 ft. west of the west road edge at final rest.

**Driver Activities:**

The driver was not injured in the accident (he was sore and stiff the next day) and was able to exit the vehicle without assistance.

**Police Activities:**

A city police officer was dispatched to the scene at 2130 hours and arrived at 2144 hours. The vehicle was off the roadway at its final rest position so traffic control procedures were not necessary. Following acquisition of all pertinent accident data, the driver was issued a summons for speeding.

Rescue Activities: The driver did not require emergency medical attention, therefore an ambulance was not dispatched to the scene.

Scene Clearance: The Storm sustained disabling damage and was towed from the accident scene to a storage yard.

### RELEVANT SAFETY ISSUES

#### Applicable Standards:

FMVSS 208:

Occupant Crash Protection in Passenger Cars, Multipurpose Passenger Vehicles, Trucks and Busses. This standard provides requirements for the installation of passive restraint systems in passenger vehicles. The Chevrolet GEO Storm was equipped with a Supplemental Inflatable Restraint (SIR) system, or airbag, for the driver position.

The airbag deployed as a result of the frontal impact with the tree. The system operated properly and effectively. The driver, who was not restrained by his active lap and shoulder belt system, sustained only minor injuries from the crash. He was sore and stiff from the impact, but did not report any other injuries. He credits the airbag for reducing his injuries. ° °

HUMAN FACTORS / OCCUPANT DATADRIVER DATA

Age:	19
Sex:	Male
Height:	74 Inches
Weight:	200 Pounds
Posture:	Normal
Ejected:	No
Entrapped:	No
Manual Restraint System Usage:	None
Passive Restraint System Usage:	Airbag
Vision:	Normal
Physical State:	Normal
Psychological State:	Normal
Driver Experience:	3 Years
Driver Education:	High school
Vehicle Familiarity:	6 Months
Route Familiarity:	Weekly
Type of Treatment:	Private Physician (next day)
Days in Hospital:	None

DRIVER INJURIES

<u>Injury</u>	<u>Severity (AIS)</u>	<u>Source</u>
Sore all over	AIS-0 (not an AIS injury)	Unknown
Stiff all over	AIS-0 (not an AIS injury)	Unknown

Injury Coding

<u>I.S.S.</u> <u>Body</u> <u>Region</u>	<u>O.I.C.</u> <u>Body</u> <u>Region</u>	<u>Aspect</u>	<u>Lesion</u>	<u>System</u> <u>Organ</u>	<u>A.I.S.</u> <u>Severity</u>	<u>Injury</u> <u>Source</u>
0	0	0	0	0	0	0

(NO AIS INJURIES)

## SELECTED PRINTS



1. Pre-impact direction of travel of the Storm on Road.



2. Consecutive view of the travel path of the vehicle.





3. Area where the left front skid mark begins.



4. Continuation of the left front skid mark.





5. Area where the vehicle departs the roadway.



6. Path of travel of the vehicle on the roadside.





7. View of the area where the Storm impacts several small trees.



8. View of a large pine tree sideswiped by the vehicle.





9. Continuation of the vehicle's path to impact with another small tree and a large tree.



10. Impact area with the large tree. This is where the airbag deployed.





11. Final rest position of the vehicle.



12. Opposite view showing the vehicle's path on the roadside.





13. Frontal view of the Chevrolet GEO Storm showing the impact damage from the tree.



14. Front right view of the vehicle.





15. Right front view showing the amount of frontal crush sustained in the impact.



16. Right side view showing the sideswipe damage from the pine tree impact.





17. Right rear three-quarter view of the vehicle.



18. Left rear three-quarter view of the vehicle.





19. Left side view of the vehicle.



20. Interior view of the Storm showing the driver's door.





21. Interior view of the deployed airbag module in the Storm.



22. Additional view of the interior and deployed airbag. No occupant contact points were found.



23. View of the lower dash and foot controls.



24. Close-up view of the deployed airbag.

SLIDE INDEX

NCSI 90-08

[REDACTED], Arkansas

**SCENE:**

1. Pre-impact direction of travel of the Chevrolet GEO Storm, south on [REDACTED] Road (note the curve warning sign).
- 2-4. Consecutive views of the vehicle's path of travel as it negotiates the curve.
5. View of the start of the skid mark from the left front tire.
6. Continuation of the skid mark on the roadway.
7. Area where the vehicle departs the roadway and travel on the roadside.
8. View of the tire tracks on the roadside showing the vehicle's path as it impacts several small trees.
9. Area where the vehicle sideswipes the large tree. The pine tree is seen on the right edge of this slide.
10. View of the vehicle's path to the frontal impact with the large tree.
11. Area of the deployment impact with the tree.
12. Final rest area of the vehicle.
13. Opposite view of the accident scene taken from beyond the last impact with the tree.
14. Opposite view showing the area where the vehicle departed the roadway.

**VEHICLE:**

15. Frontal view of the Chevrolet GEO Storm showing damage from the impact with the trees.
16. Right front three-quarter view of the vehicle.
17. View of the right front corner showing maximum crush.
18. Right side view of the vehicle showing sideswipe damage from the tree impact.

## VEHICLE (CONT'D):

19. Right rear three-quarter view.
20. Left rear three-quarter view of the vehicle.
21. Left side view of the Storm.
22. View of the airbag sensor.
23. Interior view of the vehicle showing the left door, dash and deployed airbag module. No occupant contact points were noted.
24. Interior view of the vehicle showing the driver's seat.
25. View of the dash.
- 26-27. Close-up views of the deployed airbag.
28. Interior view of the center instrument panel, windshield and airbag.
29. View of the right side instrument panel.
30. Close-up view of the driver's seatbelt showing some previous usage.



NC 9008 #1





NC 9008 #2



NC 9008 #3



NC 9008 #4





NC 9008 #5



NC 9008 #6



NC 9008 #7



NC 9008 #8



NC 9008 #9



NC 9008 #10



NC 9008 #11



NC 9008 #12





NC9008 #13



NC 9006 #14



NC 9008 #15  
Best Available



NC 9008 #16  
Best Available



NC 9008 #17  
Best Available



NC 9008 #18  
Best Available



**NC 9008 #19**  
**Best Available**



**NC 9008 #20**  
**Best Available**





NC 9008 #21



NC 9008 #22



NC 9008 #23



NC 9008 #24



NC9008 #25



NC 9008 #26



NC 900B #27



NC 9008 #28





NC 9008 #29



NC9008 #30

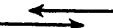
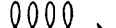
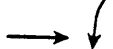
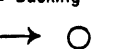
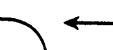
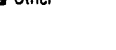
Appendix A:  
POLICE ACCIDENT REPORT

# ARKANSAS MOTOR VEHICLE TRAFFIC ACCIDENT REPORT

MUNICIPAL USE ONLY: Incident # _____ Unit Assigned _____ Premises _____ Geo. Code _____ District _____		<b>Accident Severity/Injury Code</b> 1. <input type="checkbox"/> Fatal Injury 2. <input type="checkbox"/> Incapacitating Injury 3. <input type="checkbox"/> Nonincapacitating Injury 4. <input type="checkbox"/> Possible Injury 5. <input checked="" type="checkbox"/> Property Damage only																																																																																									
County _____ City _____ Not in City, but _____ Distance _____ <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W from nearest city limit _____ Road/Street of Accident Occurrence _____ If on numbered Highway/County Road, give # _____ Section _____ Log Mile _____ At its intersection with _____ Give # Highway, County Road, Name of City Street as applicable _____ <b>Special Reference</b> Not at intersection, but _____ Distance _____ <input type="checkbox"/> N <input type="checkbox"/> S <input type="checkbox"/> E <input type="checkbox"/> W _____ Reference Point _____ (Use only the following as Reference Points) Intersecting Highway, County Road, City Street, Bridge, Railroad Crossing, Overpass, Underpass, Milepost, State Line, County Line, City Limit HIT & RUN <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Date _____ 90 Month _____ Day _____ Year _____ Day of Week _____ Time _____ 2:30 AM _____ PM _____ No. Vehicles Involved <u>ONE</u>																																																																																									
<b>Vehicle</b> Year _____ Make _____ Model _____ Body Style _____ Reg. _____ Year _____ State _____ Number _____ Vin # _____ Owner _____ Address _____ <input type="checkbox"/> Rented to _____ Address _____ <input type="checkbox"/> Leased to _____ Address _____ Trailers <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes # Units _____ Reg. State _____ Plate # _____ Cargo <input type="checkbox"/> Not Known <input type="checkbox"/> Hazardous <input type="checkbox"/> Nonhazardous Prior Vehicle Damage <u>NONE NOTED</u> Vehicle Defects <u>NONE NOTED</u> Vehicle Damage as result of Accident <input type="checkbox"/> Disabled <input type="checkbox"/> Functional <input checked="" type="checkbox"/> Other Damage <input type="checkbox"/> No Damage Investigator's Estimated Cost to Repair \$ <u>3500.00</u> <input type="checkbox"/> Driven away <input checked="" type="checkbox"/> Towed away By _____ SERVICE _____ To _____		<b>Seating Position</b> 00 — Nonoccupant 11 — Front Seat L.S. 12 — Front Seat C. 13 — Front Seat R.S. 19 — Front Seat Not Known 21 — Second Seat L.S. 22 — Second Seat C. 23 — Second Seat R.S. 29 — Second Seat Not Known 31 — Third Seat L.S. 32 — Third Seat C. 33 — Third Seat R.S. 39 — Third Seat Not Known 41 — Fourth Seat L.S. 42 — Fourth Seat C. 43 — Fourth Seat R.S. 49 — Fourth Seat Not Known 50 — Sleeper Section Cab of Truck 51 — Open Bed of Truck 52 — In Training Unit 53 — Riding on Veh. Exterior 99 — Not Known																																																																																									
<b>Operator</b> Name _____ Address _____ Type License: Chauffeur <input type="checkbox"/> Operator <input checked="" type="checkbox"/> Cyclist <input type="checkbox"/> School Bus <input type="checkbox"/> Learner Permit <input type="checkbox"/> Court Permit <input type="checkbox"/> Restricted <input type="checkbox"/> No License <input type="checkbox"/> BAC Test: Yes <input type="checkbox"/> Results If Known _____ Not Tested <input checked="" type="checkbox"/> Refused Test <input type="checkbox"/> Operator Residence: Local <input checked="" type="checkbox"/> Elsewhere in State <input type="checkbox"/> Nonresident of State <input type="checkbox"/> Residence Not Known <input type="checkbox"/> Operator License _____ License # _____ State _____ Operator Data DOB _____ Name _____ Address _____ Name _____ Address _____ Name _____ Address _____ Name _____ Address _____		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Race</th> <th>Sex</th> <th>Age</th> <th>Inj.</th> <th>Seat Pos.</th> <th>Type</th> <th>Rest.</th> <th>Eject.</th> </tr> </thead> <tbody> <tr> <td>B</td> <td>M</td> <td>19</td> <td>5</td> <td>11</td> <td>0</td> <td>0</td> <td></td> </tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		Race	Sex	Age	Inj.	Seat Pos.	Type	Rest.	Eject.	B	M	19	5	11	0	0																																																																									
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B	M	19	5	11	0	0																																																																																					
<b>Vehicle</b> Year _____ Make _____ Model _____ Body Style _____ Reg. _____ Year _____ State _____ Number _____ Vin # _____ Owner _____ Address _____ <input type="checkbox"/> Rented to _____ Address _____ <input type="checkbox"/> Leased to _____ Address _____ Trailers <input type="checkbox"/> No <input type="checkbox"/> Yes # Units _____ Reg. State _____ Plate # _____ Cargo <input type="checkbox"/> Not Known <input type="checkbox"/> Hazardous <input type="checkbox"/> Nonhazardous Prior Vehicle Damage _____ Vehicle Defects _____ Vehicle Damage as result of Accident <input type="checkbox"/> Disabled <input type="checkbox"/> Functional <input type="checkbox"/> Other Damage <input type="checkbox"/> No Damage Investigator's Estimated Cost to Repair \$ _____ <input type="checkbox"/> Driven away <input type="checkbox"/> Towed away By _____ To _____		<b>Occupant Restraint System</b> 0 — None Used 1 — Shoulder Belt 2 — Lap Belt 3 — Lap & Shoulder Belts 4 — Child Safety Seat 5 — Motorcycle Helmet 6 — Deployed Air Bag 7 — Non-Deployed Air Bag 8 — Restraint Used — Type Unknown 9 — Unknown <b>Ejection</b> 0 — Not Ejected 1 — Totally Ejected 2 — Partially Ejected 9 — Unknown																																																																																									
<b>Operator</b> Name _____ Address _____ Type License: Chauffeur <input type="checkbox"/> Operator <input type="checkbox"/> Cyclist <input type="checkbox"/> School Bus <input type="checkbox"/> Learner Permit <input type="checkbox"/> Court Permit <input type="checkbox"/> Restricted <input type="checkbox"/> No License <input type="checkbox"/> BAC Test: Yes <input type="checkbox"/> Results If Known _____ Not Tested <input type="checkbox"/> Refused Test <input type="checkbox"/> Operator Residence: Local <input type="checkbox"/> Elsewhere in State <input type="checkbox"/> Nonresident of State <input type="checkbox"/> Residence Not Known <input type="checkbox"/> Operator License _____ License # _____ State _____ Operator Data DOB _____ / / Name _____ Address _____ Name _____ Address _____ Name _____ Address _____ Name _____ Address _____		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Race</th> <th>Sex</th> <th>Age</th> <th>Inj.</th> <th>Seat Pos.</th> <th>Type</th> <th>Rest.</th> <th>Eject.</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>		Race	Sex	Age	Inj.	Seat Pos.	Type	Rest.	Eject.																																																																																
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## Veh 1, Damage

- ☐ None    ☐ Overturned  
☐ Burned    ☐ Submerged  
☐ Top    ☐ U. Carriage  
☐ Unknown

Color GRAYBody Style 2 DRPoint of Initial Contact FRONT☐ Head On☐ Rear End☐ Angle☐ Sideswipe☐ Sideswipe☐ Overturn☐ Left Turn☐ Right Turn☐ Backing☐ Left Turn☐ Right Turn☐ Other

## Veh 2, Damage

- ☐ None    ☐ Overturned  
☐ Burned    ☐ Submerged  
☐ Top    ☐ U. Carriage  
☐ Unknown

Color \_\_\_\_\_

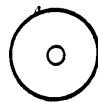
Body Style \_\_\_\_\_

Point of Initial Contact \_\_\_\_\_

## INVESTIGATOR DESCRIPTION: (Refer to vehicle by operator)

~~XXXXXXXXXX~~ THE, OPERATOR OF V-1, SAID THAT HE WAS DRIVING SOUTH ON ~~XXXX~~ ROAD, AND JUST AS HE ENTERED THE CURVE HE SAW TWO TRUCKS SIDE BY SIDE HEADING NORTH JUST INSIDE THE CURVE. V-1 SAID THAT HE HIT HIS BRAKES TO AVOID HITTING THE VEHICLES, BUT WHEN HE DID HE LOST CONTROL OF HIS VEHICLE AND HIT A TREE. ~~XXXXXXXXXX~~ MADE APPROX. 173 FEET OF SKID MARKS FROM THE TIME HE BRAKED FOR COLLISION. THERE WERE NO WITNESSES OR SUSPECT WHEN WE ARRIVE AT THE SCENE.

## DIAGRAM: (If space adequate)

 Indicate  
North, Use  
Arrow
Arrest: ~~XXXXXXXXXX~~ Charge ~~XXXXXXXXXX~~ Summons # ~~XXXXXX~~

Arrest: \_\_\_\_\_ Charge \_\_\_\_\_ Summons # \_\_\_\_\_

Time notified of accident 2130 Time arrived 2144 Date ~~XXXXXX~~ -90

The data in this report reflects my best judgement and knowledge based on information available to me.

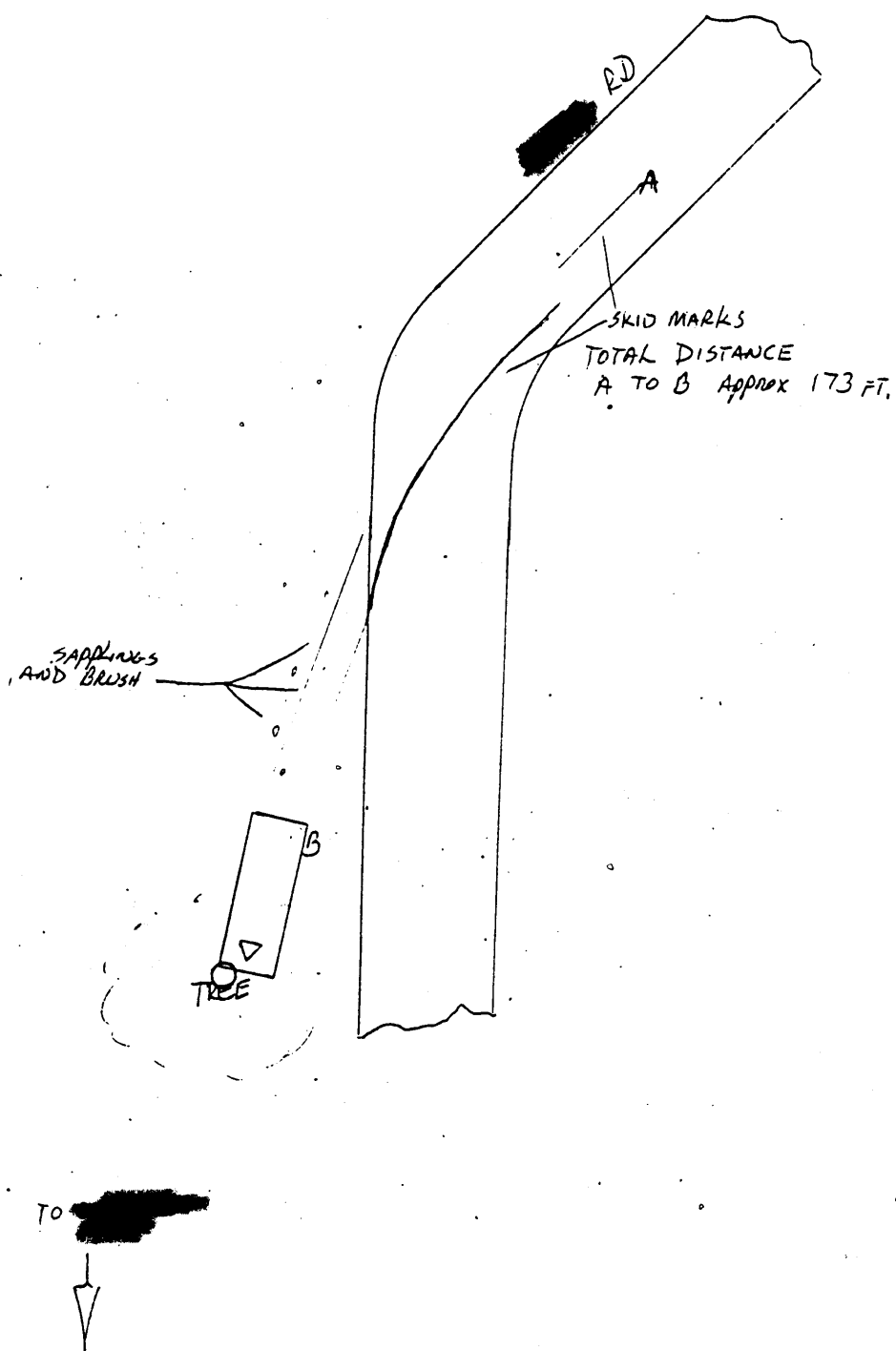
Photos ☐ Yes ☒ NoInvestigator: ~~XXXXXXXXXX~~ POLICE DEPT ~~XXXXXX~~ -90

Name and ID Number

Department

Date Submitted

[REDACTED]  
-90  
21:30 HRS.



N  
↑  
NOT TO SCALE

**Atmospheric Conditions**  
0 ☒ No Adverse Conditions  
1 ☐ Rain 2 ☐ Sleet  
3 ☐ Snow 4 ☐ Fog  
5 ☐ High Winds  
6 ☐ Smoke 7 ☐ Smog 8 ☐ Dust  
9 ☐ Other  
10 ☐ Not Known  
Temperature \_\_\_\_\_

**Light Conditions**  
1 ☐ Daylight 2 ☒ Dark 3 ☐ Dawn 4 ☐ Dusk  
5 ☐ Dark but lighted  
6 ☐ Dark, light not functioning  
7 ☐ Not Known

**Accident Locale**  
1 ☐ Rural 2 ☒ Urban  
3 ☐ Not Known

**Roadway Surface Condition**  
1 ☒ Dry 2 ☐ Wet 3 ☐ Ice  
4 ☐ Sand 5 ☐ Dirt 6 ☐ Oil  
7 ☐ Other  
8 ☐ Not Known

**Road System**  
Speed Limit 30 MPH Posted ☐ Yes ☒ No  
1 ☐ Interstate 2 ☐ U.S. Hwy. 3 ☐ State Hwy.  
4 ☒ County Road 5 ☐ City Street 6 ☐ Other  
7 ☐ Not Known

**Road Surface Type**  
1 ☐ Concrete 2 ☒ Asphalt  
3 ☐ Gravel 4 ☐ Dirt  
5 ☐ Other  
6 ☐ Not Known

**Roadway Alignment/Profile**  
1 ☐ Straight 1 ☐ Level  
2 ☒ Curve 2 ☐ Grade  
3 ☐ Not Known 3 ☒ Hillcrest  
4 ☐ Sag  
5 ☐ Not Known

**Construction/Maintenance Zone**  
1 ☐ Yes 2 ☒ No  
3 ☐ Highway Const 4 ☐ Utility 5 ☐ Other  
Protected 6 ☐ No 7 ☐ Yes How \_\_\_\_\_  
8 ☐ Reduced Road Width  
9 ☐ Road Repair 10 ☐ Maintenance

**Trafficway Flow**  
1 ☐ Divided 2 ☒ Not Divided # Lanes 2  
3 ☐ Divided by Median  
4 ☐ Divided by Other Barrier  
5 ☐ Divided by Temporary Barrier  
6 ☐ One Way Traffic  
7 ☐ Not Known

**Roadway Conditions**  
0 ☐ No Adverse Conditions  
1 ☐ Obstruction, Warning  
2 ☐ Obstruction, No Warning  
3 ☐ Loose Materials on Surface  
4 ☐ Holes 5 ☐ Ruts 6 ☐ Bumps  
7 ☐ Defective Shoulders  
8 ☒ No Markings  
9 ☐ Other Defects  
10 ☐ Defects Not Known

**Relation to Junction**  
0 ☒ Non-Junction  
1 ☐ Intersection 2 ☐ Intersection Related  
3 ☐ Driveway 4 ☐ Alley  
5 ☐ Exit Lane 6 ☐ Entrance Lane  
7 ☐ RR Crossing  
8 ☐ Crossover Lane  
9 ☐ Other  
10 ☐ Not Known

**Traffic Controls**  
0 ☒ No Controls Present  
1 ☐ Flashing Beacon  
2 ☐ Traffic Signal  
3 ☐ Stop Sign 4 ☐ Yield Sign  
5 ☐ RR Crossing with Gates & Lights  
6 ☐ RR Crossing, Flashing Lights Only  
7 ☐ RR Crossing, Crossbuck Only  
8 ☐ School Zone, Children Present  
9 ☐ Pedestrian Signal  
10 ☐ Lane Markings  
11 ☐ Other Controls  
12 ☐ Controls Not Known  
13 ☐ Device Not Functioning  
14 ☐ Device Functioning Properly  
15 ☐ Device Functioning Improperly

**Vehicle Travel Direction**  
V1 ☐ N ☒ S ☐ E ☐ W  
V2 ☐ N ☐ S ☐ E ☐ W

**Vehicle Action**  
V1  
1 ☐ Going Straight  
2 ☒ Negotiating Curve  
3 ☐ Slowing  
4 ☐ Stopped in Traffic Lane  
5 ☐ Merging  
6 ☐ Enter, Parked Position  
7 ☐ Exit, Parked Position  
8 ☐ Parked  
9 ☐ Turning Right  
10 ☐ Turning Right on Red  
11 ☐ Turning Left  
12 ☐ Turning Left on Red  
13 ☐ Making U Turn  
14 ☐ Backing  
15 ☒ Avoiding Vehicle  
16 ☐ Avoiding Pedestrian  
17 ☐ Avoiding Animal  
18 ☐ Avoiding Other Object  
19 ☐ Passing  
20 ☐ Changing Lanes  
21 ☐ Other Action  
22 ☐ Action Not Known

**Vision Obscurement**  
V1  
0 ☒ Vision not obscured  
1 ☐ Rain  
2 ☐ Snow  
3 ☐ Sleet  
4 ☐ Fog  
5 ☐ Glare  
6 ☐ Sunlight  
7 ☐ Headlights  
8 ☐ Building  
9 ☐ Billboard  
10 ☐ Trees  
11 ☐ Shrubs  
12 ☐ Other Vegetation  
13 ☐ Moving Vehicle  
14 ☐ Parked Vehicle  
15 ☐ Ice on Windshield  
16 ☐ Fog on Windshield  
17 ☐ Broken Windshield  
18 ☐ Dirty Windshield  
19 ☐ Other  
20 ☐ Not Known

**Contributing Factors**  
OPR 1 OPR 2  
0 ☐ No Contributing Factor  
1 ☒ Too Fast For Conditions  
2 ☐ Fail to Yield  
3 ☐ Alcohol  
4 ☐ Drugs  
5 ☐ Disregarded Stop Sign  
6 ☐ Disregarded Yield Sign  
7 ☐ Disregarded Traffic Signal  
8 ☐ Wrong Side Road  
9 ☐ Wrong Way — 1 Way Traffic  
10 ☐ Followed Too Close  
11 ☐ Illegal Right Turn  
12 ☐ Illegal Left Turn  
13 ☐ Illegal Lane Change  
14 ☐ Illegal Passing  
15 ☐ Prohibited U Turn  
16 ☐ Operating Defective Lights  
17 ☐ Operating Defective Brakes  
18 ☐ Operating Other Defective Equipment  
19 ☐ Unsafe Backing  
20 ☐ Other Factor  
21 ☐ Factor Not Known

**Fire Occurrence**  
0 ☒ No Fire Occurrence  
V1 1 ☐ Fire Occurrence, Result of Impact  
V2 2 ☐ Fire Occurrence, Result of Impact

**First Harmful Event**  
**Non-Collision**  
10 ☐ Overturn  
11 ☐ Fire 12 ☐ Explosion  
13 ☐ Immersion  
14 ☐ Gas Inhalation  
15 ☐ Fell from Vehicle  
16 ☐ Injured in Vehicle  
17 ☐ Other Non-Collision  
**Collision With**  
1 ☐ Pedestrian  
2 ☐ Pedacycle  
3 ☐ Railway Train  
4 ☐ MV in Transport  
5 ☐ MV in Other Roadway  
6 ☐ Parked Motor Vehicle  
7 ☐ Animal  
8 ☐ Other Object Not Fixed

**Collision with Fixed Object**  
20 ☒ TREE  
Identify Object \_\_\_\_\_

**First Harmful Event Occurred**  
1 ☐ On Roadway  
2 ☐ Shoulder 3 ☐ Median  
4 ☐ Roadside 5 ☒ Outside Trafficway  
6 ☐ Location Unknown

**Most Harmful Event**  
V1 COLLISION WITH TREE  
Identify Event \_\_\_\_\_  
V2 \_\_\_\_\_  
Identify Event \_\_\_\_\_

**Pedestrian Location**  
1 ☐ In Crosswalk 6 ☐ No Crosswalk  
2 ☐ Intersection 7 ☐ Non-Intersection  
3 ☐ On Roadway 8 ☐ Sidewalk  
4 ☐ On Road Shoulder 9 ☐ Location Not Known  
5 ☐ Bike Path 10 ☒ No Pedestrian  
11 ☐ Other Location \_\_\_\_\_

**Pedestrian Action**  
0 ☐ Not Visible  
1 ☐ Crossing Road, No Intersection  
2 ☐ Crossing at Intersection  
3 ☐ Walking with Traffic  
4 ☐ Walking Against Traffic  
5 ☐ Playing 6 ☐ Lying in Roadway  
7 ☐ Working 8 ☐ Standing in Roadway  
9 ☒ No Pedestrian  
10 ☐ Other Ped. Action  
11 ☐ Action Not Known

EMS Time Notified \_\_\_\_\_  
EMS Time Arrived \_\_\_\_\_  
Injured Transported to \_\_\_\_\_  
Transported by \_\_\_\_\_

**INSURANCE CARRIER**  
V1 [REDACTED]  
V2 [REDACTED]

Damage to Property Other Than Vehicle \_\_\_\_\_ Describe Property \_\_\_\_\_

Owner of Property \_\_\_\_\_ Name \_\_\_\_\_ Address \_\_\_\_\_ Estimate of Damage \_\_\_\_\_

Notified of Damage \_\_\_\_\_ Name \_\_\_\_\_ Address \_\_\_\_\_ Time \_\_\_\_\_ Date \_\_\_\_\_

Witnesses \_\_\_\_\_ Name \_\_\_\_\_ Address \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_

Witnesses \_\_\_\_\_ Name \_\_\_\_\_ Address \_\_\_\_\_ Age \_\_\_\_\_ Sex \_\_\_\_\_

**Appendix B:**

**NASS FORMS**





U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

# CASE SUMMARY

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

PSU NCST CASE NO. 90-08 TYPE OF ACCIDENT CAR/TREE, FRONTAL

## A. DESCRIPTION OF THE ACCIDENT SEQUENCE AND ACCIDENT PECULIARITIES

(Provide a summary of the accident sequence as well as any particular event of the accident that is noteworthy. Injury mechanism and vehicle crashworthiness is the focus, not driver culpability. Do not include any personal identifiers. Use reverse side if needed.)

SEE SUMMARY (page 1)

## B. VEHICLE PROFILE(S)

Vehicle No.	Class of Vehicle	Year/Make/Model	Most Severe Damage		Component Failure
			Damage Plane	Severity Description	
1	SUBCOMPACT	1990/GEO/STORM	FRONT	MODERATE	NONE

## C. PERSON PROFILE(S)

Vehicle No.	Person Role	Seat Position	Restraint Use	Most Severe Injury			
				Body Region	Lesion	AIS	Injury Source
1	DRIVER	LEFT FRONT	NONE	NOT INJURED		0	N/A

DO NOT SANITIZE THIS FORM



U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

# ACCIDENT COLLISION MEASUREMENT TABLE

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

BEST AVAILABLE COPY

Primary Sampling Unit Number <u>NC 51</u>		Case Number—Stratum <u>90-08</u>																
ACCIDENT COLLISION DIAGRAM																		
<p><b>LEVEL I</b> <b>PHYSICAL EVIDENCE ABSENT</b></p> <p>To be accomplished when there is no physical evidence present at the scene:</p> <ul style="list-style-type: none"> <li>* approximate vehicle orientation at impact and final rest</li> <li>* applicable road/roadway delineation (e.g., curbs/edge lines, lane markings, median markings, pavement markings, etc.)</li> <li>* applicable traffic controls (e.g., speed limit)</li> <li>* north arrow placed on diagram</li> <li>* sketch required</li> </ul>	<p><b>LEVEL II (Cont'd)</b> accomplished when physical evidence is present:</p> <ul style="list-style-type: none"> <li>* document reference point and reference line relative to physical features present at the scene</li> <li>* scaled documentation of all accident induced physical evidence</li> <li>* scaled documentation of all roadside objects contacted</li> <li>* roadway surface type and condition of applicable roadways</li> <li>* grade measurements for all applicable roadways</li> <li>* scaled representations of the vehicle(s) at pre-impact, impact, and final rest based upon either:               <ul style="list-style-type: none"> <li>a) physical evidence, or</li> <li>b) reconstructed accident dynamics</li> </ul> </li> </ul>	<p><b>CRASH DATA</b></p> <table style="width:100%; border: none;"> <tr> <td style="text-align: right;">VEH. #1</td> <td style="text-align: right;">VEH. #2</td> <td style="text-align: right;">VEH. #3</td> </tr> <tr> <td colspan="3">Heading Angle <u>175°</u></td> </tr> <tr> <td colspan="3">Surface Type <u>ASPHALT</u></td> </tr> <tr> <td colspan="3">Surface Condition <u>FAIR</u></td> </tr> <tr> <td colspan="3">Grade Measurement (v/h) <u>2/48</u></td> </tr> </table>		VEH. #1	VEH. #2	VEH. #3	Heading Angle <u>175°</u>			Surface Type <u>ASPHALT</u>			Surface Condition <u>FAIR</u>			Grade Measurement (v/h) <u>2/48</u>		
VEH. #1	VEH. #2	VEH. #3																
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Grade Measurement (v/h) <u>2/48</u>																		
<p><b>LEVEL II</b> <b>PHYSICAL EVIDENCE PRESENT</b></p> <p>In addition to the Level I tasks noted above, the following must be</p>																		
Reference Point: <u>AP &amp; L</u>		Reference Line: <u>W. edge of [redacted]</u>																
Item	Distance and Direction from Reference Point	Distance and Direction from Reference Line																
SKIDS BEGIN LF	18 <sup>2</sup> N	15 <sup>11</sup> E																
MIDPOINT LF	19 <sup>4</sup> S	11 <sup>4</sup> E																
OFF ROAD RF LF	55 <sup>1</sup> 78 <sup>2</sup>	0																
TRACKS ON ROAD SIDE	100 <sup>0</sup>	RF 8 <sup>2</sup> LF 3 <sup>11</sup> W																
SMALL TREE #1	114 <sup>6</sup>	10 <sup>2</sup>																
" #2	119 <sup>2</sup>	12 <sup>6</sup>																
" #3	120 <sup>8</sup>	12 <sup>8</sup>																
" #4	124 <sup>3</sup>	14 <sup>8</sup>																
PINE TREE	123 <sup>2</sup>	15 <sup>10</sup>																
SMALL TREE #5	134 <sup>5</sup>	11 <sup>4</sup>																
OAK TREE	142 <sup>3</sup>	15 <sup>11</sup>																
FINAL REST RF LF	131 <sup>2</sup> 133 <sup>4</sup>	15 <sup>2</sup> 11 <sup>4</sup>																

HS Form 431A (1/90)



U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

BEST AVAILABLE COPY  
NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

# ACCIDENT COLLISION DIAGRAM

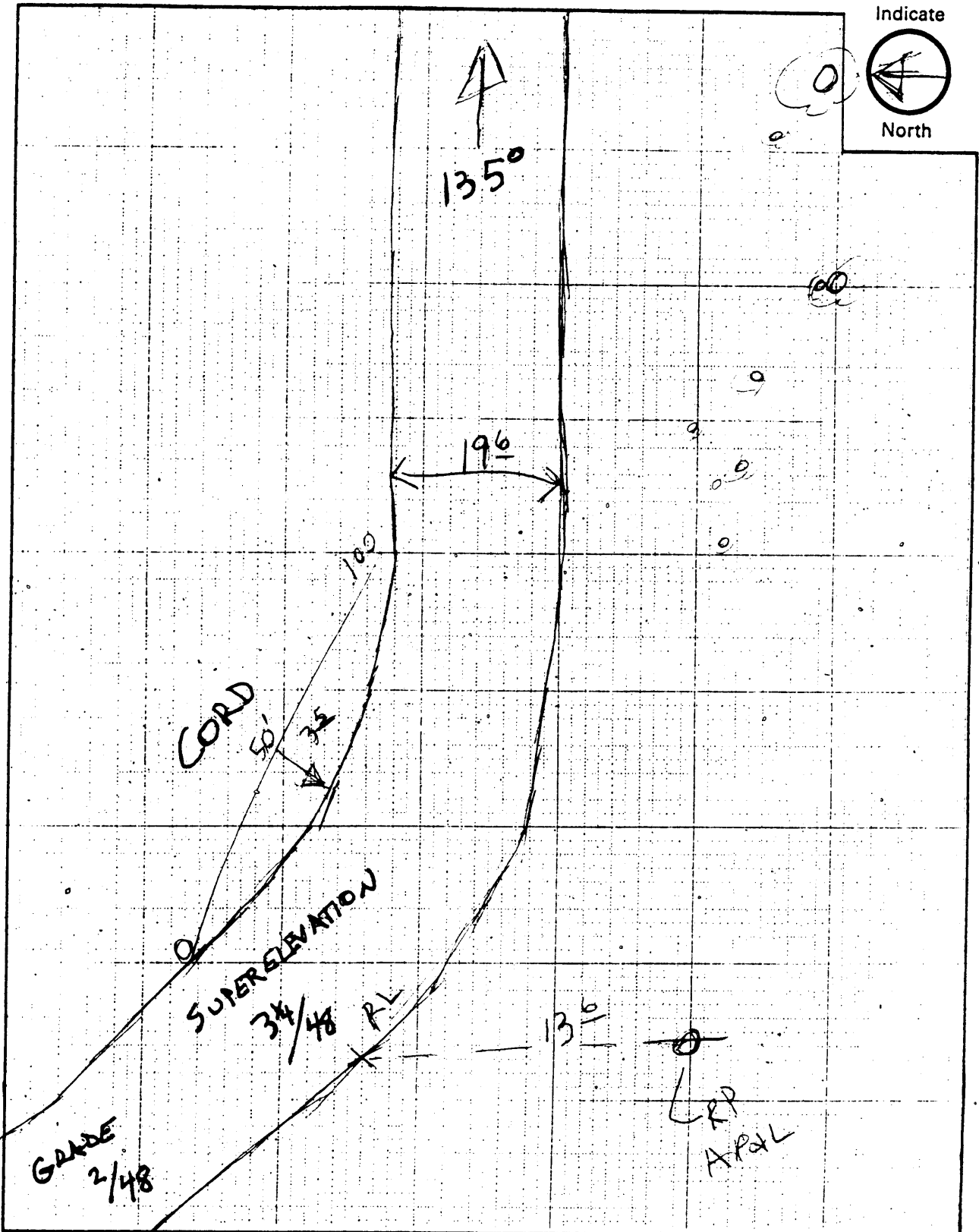
PSU No. NC 51

Case Number—Stratum 9 0-0 8

Indicate



North



HS Form 431B (1/90)



U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

# ACCIDENT FORM

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number NCST

2. Case Number - Stratum 90-08

## IDENTIFICATION

3. Number of General Vehicle  
Forms Submitted 01

4. Date of Accident  
(Month, Day, Year)            9 0

5. Time of Accident 2130

Code reported military time of accident.

NOTE: Midnight = 2400  
Unknown = 9999

## SPECIAL STUDIES INDICATORS

Check (✓) each special study (SS12-SS16 below) that has been completed; code 1 for the checked special studies and 0 for the special studies not checked.

6.      SS12 Not Active 0

7.      SS13 AOPS 0

8.      SS14                      0

9.      SS15                      0

10.      SS16                      0

## NUMBER OF EVENTS

11. Number of Recorded Events  
in This Accident 03

Code the number of events which occurred in  
this accident.

## ACCIDENT EVENTS

For each event that occurred in the accident, code the lowest numbered vehicle in the left columns and the other involved vehicle or object on the right.

Accident Event Sequence Number	Vehicle Number	Class of Vehicle	General Area of Damage	Vehicle Number or Object Contacted	Class of Vehicle	General Area of Damage
12. <u>01</u>	13. <u>01</u>	14. <u>01</u>	15. <u>F</u>	16. <u>41</u>	17. <u>    </u>	18. <u>    </u>
19. <u>02</u>	20. <u>01</u>	21. <u>01</u>	22. <u>R</u>	23. <u>42</u>	24. <u>    </u>	25. <u>    </u>
26. <u>03</u>	27. <u>01</u>	28. <u>01</u>	29. <u>F</u>	30. <u>42</u>	31. <u>    </u>	32. <u>    </u>
33. <u>04</u>	34. <u>    </u>	35. <u>    </u>	36. <u>    </u>	37. <u>    </u>	38. <u>    </u>	39. <u>    </u>
40. <u>05</u>	41. <u>    </u>	42. <u>    </u>	43. <u>    </u>	44. <u>    </u>	45. <u>    </u>	46. <u>    </u>

IF GREATER THAN FIVE EVENTS, CONTINUE CODING ON THE ACCIDENT EVENTS SUPPLEMENT

CODES FOR CLASS OF VEHICLE	CODES FOR GENERAL AREA OF DAMAGE (GAD)	
(00) Not a motor vehicle (01) Subcompact/mini (wheelbase 100") (02) Compact (wheelbase = 100"-104") (03) Intermediate (wheelbase = 105"-109") (04) Full size (wheelbase = 110"-114") (05) Largest (wheelbase = 115") (09) Unknown passenger car size (11) Short utility vehicle (12) Truck based utility (< 10,000 lbs GVWR) (13) Passenger van (< 10,000 lbs GVWR) (14) Other van (< 10,000 lbs GVWR) (15) Pickup truck (< 10,000 lbs GVWR) (18) Other truck (< 10,000 lbs GVWR) (19) Unknown light truck type (20) School bus (21) Other bus (22) Truck (< 10,000 lbs GVWR) (23) Tractor without trailer (24) Tractor-trailer(s) (25) Motored cycle (28) Other vehicle (99) Unknown	CDC APPLICABLE AND OTHER VEHICLES	TDC APPLICABLE VEHICLES
	(0) Not a motor vehicle (N) Noncollision (F) Front (R) Right side (L) Left side (B) Back (T) Top (U) Undercarriage (9) Unknown	(0) Not a motor vehicle (N) Noncollision (F) Front (R) Right side (L) Left side (B) Back of unit with cargo area (rear of trailer or straight truck) (D) Back (rear of tractor) (C) Rear of cab (V) Front of cargo area (T) Top (U) Undercarriage (9) Unknown
<b>CODES FOR VEHICLE NUMBER OR OBJECT CONTACTED</b>		
(01-30) — Vehicle number		
Noncollision		
(31) Overturn, — rollover (32) Fire or explosion (33) Jackknife (34) Other intraunit damage (specify): _____		
(35) Noncollision injury (38) Other noncollision (specify): _____		
(39) Noncollision — details unknown		
Collision with Fixed Object		
(41) Tree (< 4 inches in diameter) (42) Tree (> 4 inches in diameter) (43) Shrubbery or bush (44) Embankment (45) Breakaway pole or post (any diameter)		
Nonbreakaway Pole or Post		
(50) Pole or post (< 4 inches in diameter) (51) Pole or post (> 4 but < 12 inches in diameter) (52) Pole or post (> 12 inches in diameter) (53) Pole or post (diameter unknown)		
(54) Concrete traffic barrier (55) Impact attenuator (56) Other traffic barrier (specify): _____		
(57) Fence (58) Wall (59) Building (60) Ditch or culvert (61) Ground (62) Fire hydrant (63) Curb (64) Bridge (68) Other fixed object (specify): _____		
(69) Unknown fixed object		
Collision with Nonfixed Object		
(71) Motor vehicle not in-transport (72) Pedestrian (73) Cyclist or cycle (74) Other nonmotorist or conveyance (specify): _____		
(75) Vehicle occupant (76) Animal (77) Train (78) Trailer, disconnected in transport (88) Other nonfixed object (specify): _____		
(89) Unknown nonfixed object		
(98) Other event (specify): _____		
(99) Unknown event or object		



U.S. Department of Transportation  
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## GENERAL VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

<p>1. Primary Sampling Unit Number <u>NC5I</u></p> <p>2. Case Number—Stratum <u>90-08</u></p> <p>3. Vehicle Number <u>01</u></p> <p style="text-align: center;"><b>VEHICLE IDENTIFICATION</b></p> <p>4. Vehicle Model Year <u>90</u> Code the last two digits of the model year (99) Unknown</p> <p>5. Vehicle Make (specify): <u>20</u> <u>CHEVY / GEO</u> Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual. (99) Unknown</p> <p>6. Vehicle Model (specify): <u>035</u> <u>GEO STORM</u> Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual. (99) Unknown</p> <p>7. Body Type <u>02</u> Note: Applicable codes are found on the back of this page.</p> <p>8. Vehicle Identification Number <u>0</u> <u>J81RF236XL</u> Left justify; Slash zeros and letter Z (0 and Z) No VIN—Code all zeros Unknown—Code all nine's</p> <p style="text-align: center;"><b>OFFICIAL RECORDS</b></p> <p>9. Police Reported Vehicle Disposition <u>1</u> (0) Not towed due to vehicle damage (1) Towed due to vehicle damage (9) Unknown</p> <p>10. Police Reported Travel Speed <u>99</u> Code to the nearest mph (NOTE: 00 means less than 0.5 mph) (97) 96.5 mph and above (99) Unknown</p>	<p>11. Police Reported Alcohol or Drug Presence <u>1</u> (0) Neither alcohol nor drugs present (1) Yes (alcohol present) (2) Yes (drugs present) (3) Yes (alcohol and drugs present) (4) Yes (alcohol or drugs present—specifics unknown) (7) Not reported (8) No driver present (9) Unknown</p> <p>12. Alcohol Test Result for Driver <u>96</u> Code actual value (decimal implied before first digit—0.xx) (95) Test refused (96) None given (97) AC test performed, results unknown (98) No driver present (99) Unknown Source _____</p> <p style="text-align: center;"><b>ACCIDENT RELATED</b></p> <p>13. Speed Limit <u>30</u> (00) No statutory limit Code posted or statutory speed limit (99) Unknown</p> <p>14. Attempted Avoidance Maneuver <u>03</u> (00) No impact (01) No avoidance actions (02) Braking (no lockup) (03) Braking (lockup) (04) Braking (lockup unknown) (05) Releasing brakes (06) Steering left (07) Steering right (08) Braking and steering left (09) Braking and steering right (10) Accelerating (11) Accelerating and steering left (12) Accelerating and steering right (97) No driver present (98) Other action (specify): _____ (99) Unknown</p> <p>15. Accident Type <u>03</u> Applicable codes may be found on the back of page two of this field form (00) No impact Code the number of the diagram that best describes the accident circumstance (98) Other accident type (specify): _____ (99) Unknown</p>
---	--

\*\*\*\* STOP HERE IF GV07 DOES NOT EQUAL 01-49 \*\*\*\*

## National Accident Sampling System—Crashworthiness Data System: General Vehicle Form

Page 2

## OCCUPANT RELATED

16. Driver Presence in Vehicle 1

- (0) Driver not present  
(1) Driver present  
(9) Unknown

17. Number of Occupants This Vehicle 01

- (00-96) Code actual number of occupants for this vehicle  
(97) 97 or more  
(99) Unknown

18. Number of Occupant Forms Submitted 01

## VEHICLE WEIGHT ITEMS

19. Vehicle Curb Weight 02300

2282 Code weight to nearest 100 pounds.

- (010) Less than 1050 pounds  
(135) 13,500 lbs or more  
(999) Unknown

Source: [REDACTED]

20. Vehicle Cargo Weight 0000

Code weight to nearest 100 pounds.

- (00) Less than 50 pounds  
(97) 9,650 lbs or more  
(99) Unknown

## RECONSTRUCTION DATA

21. Towed Trailing Unit 0

- (0) No towed unit  
(1) Yes—towed trailing unit  
(9) Unknown

22. Documentation of Trajectory Data for This Vehicle 1

- (0) No  
(1) Yes

23. Post Collision Condition of Tree or Pole (for Highest Delta V) 1

- (0) Not collision (for highest delta V) with tree or pole  
(1) Not damaged  
(2) Cracked/sheared  
(3) Tilted <45 degrees  
(4) Tilted ≥45 degrees  
(5) Uprooted tree  
(6) Separated pole from base  
(7) Pole replaced  
(8) Other (specify):  
\_\_\_\_\_

- (9) Unknown

24. Rollover 0

- (0) No rollover (no overturning)

Rollover (primarily about the longitudinal axis)

- (1) Rollover, 1 quarter turn only  
(2) Rollover, 2 quarter turns  
(3) Rollover, 3 quarter turns  
(4) Rollover, 4 or more quarter turns (specify):  
\_\_\_\_\_

- (5) Rollover—end-over-end (i.e., primarily about the lateral axis)  
(9) Rollover (overturn), details unknown

## OVERRIDE/UNDERRIDE (THIS VEHICLE)

25. Front Override/Underride (this vehicle) 026. Rear Override/Underride (this vehicle) 0

- (0) No override/underride, or not an end-to-end impact

Override (see specific CDC)

- (1) 1st CDC  
(2) 2nd CDC  
(3) Other not automated CDC (specify):  
\_\_\_\_\_

Underride (see specific CDC)

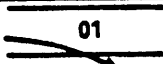
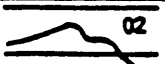
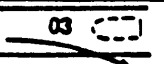



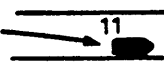
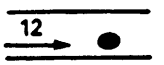
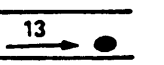
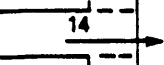
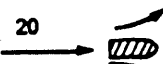
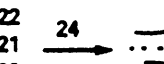
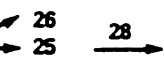
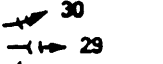
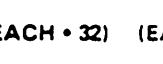



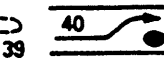
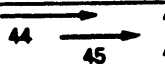

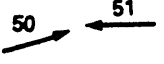


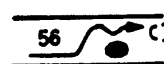
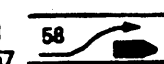



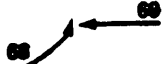
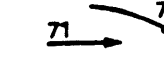
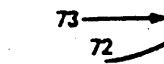
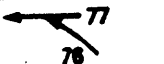


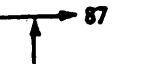

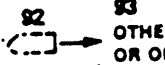

- (4) 1st CDC  
(5) 2nd CDC  
(6) Other not automated CDC (specify):  
\_\_\_\_\_

- (7) Medium/heavy truck override  
(9) Unknown

## HEADING ANGLE AT IMPACT FOR HIGHEST DELTA V

Values: (000)-(359) Code actual value  
(997) Noncollision  
(998) Impact with object  
(999) Unknown

27. Heading Angle for This Vehicle 99828. Heading Angle for Other Vehicle 998

Category	Configuration	ACCIDENT TYPES (Includes Intent)				
I Single Driver	A. Right Roadside Departure	 01 DRIVE OFF ROAD	 02 CONTROL/ TRACTION LOSS	 03 AVOID COLLISION WITH VEH., PED., ANIM.	04 SPECIFICS OTHER	05 SPECIFICS UNKNOWN
	B. Left Roadside Departure	 06 DRIVE OFF ROAD	 07 CONTROL/ TRACTION LOSS	 08 AVOID COLLISION WITH VEH., PED., ANIM.	09 SPECIFICS OTHER	10 SPECIFICS UNKNOWN
	C. Forward Impact	 11 PARKED VEH.	 12 STA. OBJECT	 13 PEDESTRIAN/ ANIMAL	 14 END DEPARTURE	15 SPECIFICS OTHER 16 SPECIFICS UNKNOWN
II Same Trafficway Same Direction	D. Rear-End	 20 STOPPED 21, 22, 23	 22 SLOWER 24, 25, 26, 27	 26 DECEL. 28, 29, 30, 31	 30 SPECIFICS OTHER	 31 SPECIFICS UNKNOWN
	E. Forward Impact	 34 CONTROL/ TRACTION LOSS	 36 CONTROL/ TRACTION LOSS	 38 AVOID COLLISION WITH VEH.	 40 AVOID COLLISION WITH OBJECT	(EACH • 42) SPECIFICS OTHER (EACH • 43) SPECIFICS UNKNOWN
	F. Sideswipe Angle	 44 LATERAL MOVE	 46 LATERAL MOVE	(EACH • 48) SPECIFICS OTHER	(EACH • 49) SPECIFICS UNKNOWN	
III Same Trafficway Opposite Direction	G. Head-On	 50 LATERAL MOVE	 51 LATERAL MOVE	(EACH • 52) SPECIFICS OTHER	(EACH • 53) SPECIFICS UNKNOWN	
	H. Forward Impact	 54 CONTROL/ TRACTION LOSS	 56 CONTROL/ TRACTION LOSS	 58 AVOID COLLISION WITH VEH.	 60 AVOID COLLISION WITH OBJECT	(EACH • 62) SPECIFICS OTHER (EACH • 63) SPECIFICS UNKNOWN
	I. Sideswipe Angle	 64 LATERAL MOVE	 66 LATERAL MOVE	(EACH • 66) SPECIFICS OTHER	(EACH • 67) SPECIFICS UNKNOWN	
IV Change Trafficway Vehicle Turning	J. Turn Across Path	 68 INITIAL OPPOSITE DIRECTIONS	 70 INITIAL SAME DIRECTIONS	 72 INITIAL SAME DIRECTIONS	(EACH • 74) SPECIFICS OTHER	(EACH • 75) SPECIFICS UNKNOWN
	K. Turn Into Path	 77 TURN INTO SAME DIRECTION	 79 TURN INTO OPPOSITE DIRECTIONS	 81 TURN INTO OPPOSITE DIRECTIONS	(EACH • 84) SPECIFICS OTHER	(EACH • 85) SPECIFICS UNKNOWN
V Intersecting Paths (Vehicle Damage)	L. Straight Paths	 87 STRAIGHT PATHS	 89 STRAIGHT PATHS	(EACH • 90) SPECIFICS OTHER	(EACH • 91) SPECIFICS UNKNOWN	
VI Miscellaneous	M. Backing Etc.	 92 BACKING VEH.	 93 OTHER VEH. OR OBJECT	96 Other Accident Type 99 Unknown Accident Type 00 No Impact		



## National Accident Sampling System—Crashworthiness Data System: General Vehicle Form

Page 3

29. Basis for Total Delta V (Highest) 1

Delta V Calculated

- (1) CRASH program—damage only routine
- (2) CRASH program—damage and trajectory routine
- (3) Missing vehicle algorithm

Delta V Not Calculated

- (4) At least one vehicle (which may be this vehicle) is beyond the scope of an acceptable reconstruction program, regardless of collision conditions.
- (5) All vehicles within scope (CDC applicable) of CRASH program but one of the collision conditions is beyond the scope of the CRASH program or other acceptable reconstruction techniques, regardless of adequacy of damage data.
- (6) All vehicles and collision conditions are within scope of one of the acceptable reconstruction programs, but there is insufficient data available.

**COMPUTER GENERATED DELTA V**

## 30. Total Delta V

Secondary Highest

13.1 Nearest mph

(NOTE: 00 means less than  
0.5 mph)  
(97) 96.5 mph and above  
(99) Unknown

## 31. Longitudinal Component of Delta V

+ 13  
-13.1 Nearest mph

(NOTE: 00 means greater than  
-0.5 and less than +0.5 mph)  
(±97) ±96.5 mph and above  
(—99) Unknown

## 32. Lateral Component of Delta V

Secondary Highest

0 Nearest mph 00

(NOTE: 00 means greater than  
-0.5 and less than +0.5 mph)  
(±97) ±96.5 mph and above  
(—99) Unknown

## 33. Energy Absorption

014600  
14635 Nearest 100 foot-lbs

(NOTE: 0000 means less than 50 Foot-Lbs)  
(9997) 999,650 foot-lbs or more  
(9999) Unknown

## 34. Confidence in Reconstruction Program Results (for Highest Delta V)

- (0) No reconstruction
- (1) Collision fits model—results appear reasonable
- (2) Collision fits model—results appear high
- (3) Collision fits model—results appear low
- (4) Borderline reconstruction—results appear reasonable

## 35. Type of Vehicle Inspection

- (0) No Inspection
- (1) Complete inspection
- (2) Partial inspection (specify):

## 36. Is this an AOPS Vehicle?

- (0) No
- (1) Yes

\*\*\* STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT INSPECTED (I.E., GV35 = 0), \*\*\*  
DO NOT COMPLETE THE EXTERIOR AND INTERIOR VEHICLE FORMS.

## EXTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number	<u>NCSI</u>	3. Vehicle Number	<u>01</u>
2. Case Number - Stratum	<u>90-08</u>		

### VEHICLE IDENTIFICATION

VIN J81RF236XL [REDACTED] Model Year 1990  
Vehicle Make (specify): GEO Vehicle Model (specify): STORM

## LOCATOR

Locate the end of the damage with respect to the vehicle longitudinal center line or bumper corner for end impacts or an undamaged axle for side impacts.

Specific Impact No.	Location of Direct Damage	Location of Field L	Location of Maximum Crush
1	FRONT BUMPER	BUMPER	RIGHT END OF BUMPER

## CRUSH PROFILE

NOTES: Identify the plane at which the C-measurements are taken (e.g., at bumper, above bumper, at sill, above sill, etc.) and label adjustments (e.g., free space).

Measure C1 to C6 from driver to passenger side in front or rear impacts and rear to front in side impacts.

Free space value is defined as the distance between the baseline and the original body contour taken at the individual C locations. This may include the following: bumper lead, bumper taper, side protrusion, side taper, etc. Record the value for each C-measurement and maximum crush.

Use as many lines/columns as necessary to describe each damage profile.

[illegible]

## National Accident Sampling System—Crashworthiness Data System: Exterior Vehicle Form

2a

## VEHICLE DAMAGE SKETCH

<b>TIRE—WHEEL DAMAGE</b> a. Rotation physically restricted RF <u>1</u> LF <u>2</u> RR <u>2</u> LR <u>2</u> (1) Yes (2) No (8) NA (9) Unk.		b. Tire deflated RF <u>2</u> LF <u>2</u> RR <u>2</u> LR <u>2</u>		<b>ORIGINAL SPECIFICATIONS</b> Wheelbase <u>96.5</u> Overall Length <u>163.4</u> Maximum Width <u>66.7</u> Curb Weight <u>2282</u> Average Track <u>56</u> Front Overhang <u>38</u> Rear Overhang <u>29</u> Engine Size: cyl./ displ. <u>4/1.6</u> Undeformed End Width <u>55</u>		<b>WHEEL STEER ANGLES</b> (For locked front wheels or displaced rear axles only) RF $\pm$ <u>2.5</u> ° LF $\pm$ _____° RR $\pm$ _____° LR $\pm$ _____° Within $\pm 5$ degrees	
<b>TYPE OF TRANSMISSION</b> <input type="checkbox"/> Manual <input type="checkbox"/> Automatic				<b>DRIVE WHEELS</b> <input checked="" type="checkbox"/> FWD <input type="checkbox"/> RWD <input type="checkbox"/> 4WD		Approximate Cargo Weight _____	

TURN SIGNAL BROKEN

Original Bumper height

SCRATCHES ENTIRE BUMPER LENGTH

56"

46"

POST-CRASH

Bumper corner 36"

Stringline 38"

96.5"

27"

Bumper corner

Stringline 29"

96.5"

36"

Bumper corner

Stringline 38"

WHEEL COVER OFF

NOTES: Sketch new perimeter and cross hatch direct damage and single hatch induced damage on all views. Annotate observations which might be useful in reconstructing the accident (e.g., grass in tire bead, direction of striations, scuff on sidewall, etc.). If pulling trailer, sketch type of trailer and damage received on the back of this page. Annotate any damage caused by extrication such as component removal by torching, prying, or hydraulic shears.

## CDC WORKSHEET

## CODES FOR OBJECT CONTACTED

## 01-30—Vehicle Number

## Noncollision

- (31) Overturn—rollover  
 (32) Fire or explosion  
 (33) Jackknife  
 (34) Other intraunit damage (specify):

- (35) Noncollision injury  
 (38) Other noncollision (specify):

## (39) Noncollision—details unknown

## Collision with Fixed Object

- (41) Tree ( $\leq 4$  inches in diameter)  
 (42) Tree ( $> 4$  inches in diameter)  
 (43) Shrubbery or bush  
 (44) Embankment

## (45) Breakaway pole or post (any diameter)

## Nonbreakaway Pole or Post

- (50) Pole or post ( $\leq 4$  inches in diameter)  
 (51) Pole or post ( $> 4$  but  $\leq 12$  inches in diameter)  
 (52) Pole or post ( $> 12$  inches in diameter)  
 (53) Pole or post (diameter unknown)

- (54) Concrete traffic barrier  
 (55) Impact attenuator  
 (56) Other traffic barrier (specify):

- (57) Fence  
 (58) Wall  
 (59) Building  
 (60) Ditch or Culvert  
 (61) Ground  
 (62) Fire hydrant  
 (63) Curb  
 (64) Bridge  
 (68) Other fixed object (specify):

## (69) Unknown fixed object

## Collision With Nonfixed Object

- (71) Motor vehicle not in transport  
 (72) Pedestrian  
 (73) Cyclist or cycle  
 (74) Other nonmotorist or conveyance (specify):

- (75) Vehicle occupant  
 (76) Animal  
 (77) Train  
 (78) Trailer, disconnected in transport  
 (88) Other nonfixed object (specify):

## (89) Unknown nonfixed object

## (98) Other event (specify):

## (99) Unknown event or object

## DEFORMATION CLASSIFICATION BY EVENT NUMBER

FEVERAL  
SMALL  
TAPES  
&  
BUSHES

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force (degrees)	Incremental Value of Shift	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
01	41	360	00	F	D	E	W	01
02	42	360	00	R	D	A	S	01
03	42	360	00	F	Z	E	W	01
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## National Accident Sampling System – Crashworthiness Data System: Exterior Vehicle Form

Page 4

## COLLISION DEFORMATION CLASSIFICATION

## HIGHEST DELTA "V"

Accident Event Sequence Number	Object Contacted	(1) (2) Direction of Force	(3) Deformation Location	(4) Specific Longitudinal or Lateral Location	(5) Specific Vertical or Lateral Location	(6) Type of Damage Distribution	(7) Deformation Extent
4. <u>03</u>	5. <u>42</u>	6. <u>12</u>	7. <u>F</u>	8. <u>Z</u>	9. <u>E</u>	10. <u>W</u>	11. <u>02</u>

## Second Highest Delta "V"

12. <u>02</u>	13. <u>42</u>	14. <u>12</u>	15. <u>R</u>	16. <u>D</u>	17. <u>A</u>	18. <u>S</u>	19. <u>01</u>
---------------	---------------	---------------	--------------	--------------	--------------	--------------	---------------

## CRUSH PROFILE

(The crush profile for the damage described in the CDC(s) above should be documented in the appropriate space below. ALL MEASUREMENTS ARE IN INCHES.)

## HIGHEST DELTA "V"

20. L	21. C1	C2	C3	C4	C5	C6	22. - - D
<u>055</u>	<u>03</u>	<u>03</u>	<u>03</u>	<u>05</u>	<u>08</u>	<u>10</u>	<u>000</u>

## Second Highest Delta "V"

23. L	24. C1	C2	C3	C4	C5	C6	25. + - D

26. Are CDCs Documented but Not Coded on The Automated File  
(0) No  
(1) Yes

27. Researcher's Assessment of Vehicle Disposition  
(0) Not towed due to vehicle damage  
(1) Towed due to vehicle damage  
(9) Unknown

28. Original Wheelbase  
Code to the nearest tenth of an inch  
(9999) Unknown

\*\*\* STOP: IF THE CDS APPLICABLE VEHICLE WAS NOT TOWED \*\*\*  
(I.E., GV09 = 0 OR 9), DO NOT COMPLETE THE INTERIOR VEHICLE FORM.



U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

# INTERIOR VEHICLE FORM

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number

NCSI

2. Case Number—Stratum

90-03

3. Vehicle Number

01

## INTEGRITY

4. Passenger Compartment Integrity

00

(00) No integrity loss

Yes, Integrity Was Lost Through

(01) Windshield

(02) Door (side)

(03) Door/hatch (rear)

(04) Roof

(05) Roof glass

(06) Side window

(07) Rear window

(08) Roof and roof glass

(09) Windshield and door (side)

(10) Windshield and roof

(11) Side and rear window

(12) Windshield and side window

(13) Door and side window

(98) Other combination of above (specify):

(99) Unknown

Door, Tailgate Or Hatch Opening

5. LF 1 6. RF 1 7. LR 0 8. RR 0 9. TG/H 0

(0) No door/gate/hatch

(1) Door/gate/hatch remained closed and operational

(2) Door/gate/hatch came open during collision

(3) Door/gate/hatch jammed shut

(8) Other (specify):

(9) Unknown

Damage/Failure Associated with Door, Tailgate or Hatch Opening in Collision. If IV05-IV09 ≠ 2, Then Code 0.

10. LF 0 11. RF 0 12. LR 0 13. RR 0 14. TG/H 0

(0) No door/gate/hatch or door not opened

Door, Tailgate, or Hatch Came Open During Collision

(1) Door operational (no damage)

(2) Latch/striker failure due to damage

(3) Hinge failure due to damage

(4) Door structure failure due to damage

(5) Door support (i.e., pillar, sill, roof side rail, etc.) failure due to damage

(6) Latch/striker and hinge failure due to damage

(8) Other failure (specify):

(9) Unknown

## GLAZING

Glazing Damage from Impact Forces

15. WS 0 16. LF 0 17. RF 0 18. LR 0 19. RR 0

20. BL 0 21. Roof 0 22. Other 0

(0) No glazing damage from impact forces

(2) Glazing in place and cracked from impact forces

(3) Glazing in place and holed from impact forces

(4) Glazing out-of-place (cracked or not) and not holed from impact forces

(5) Glazing out-of-place and holed from impact forces

(6) Glazing disintegrated from impact forces

(7) Glazing removed prior to accident

(8) No glazing

(9) Unknown if damaged

Glazing Damage from Occupant Contact

23. WS 0 24. LF 0 25. RF 0 26. LR 0 27. RR 0

28. BL 0 29. Roof 0 30. Other 0

(0) No occupant contact to glazing or no glazing

(1) Glazing contacted by occupant but no glazing damage

(2) Glazing in place and cracked by occupant contact

(3) Glazing in place and holed by occupant contact

(4) Glazing put-of-place (cracked or not) by occupant contact and not holed by occupant contact

(5) Glazing out-of-place by occupant contact and holed by occupant contact

(6) Glazing disintegrated by occupant contact

(9) Unknown if contacted by occupant

If No Glazing Damage *And* No Occupant Contact or No Glazing, Then Code IV 31 Through IV 46 As 0

Type of Window/Windshield Glazing

31. WS 0 32. LF 0 33. RF 0 34. LR 0 35. RR 0

36. BL 0 37. Roof 0 38. Other 0

(0) No glazing contact and no damage, or no glazing

(1) AS-1 — Laminated

(2) AS-2 — Tempered

(3) AS-3 — Tempered-tinted

(4) AS-14 — Glass/Plastic

(8) Other (specify):

(9) Unknown

Window Precrash Glazing Status

39. WS 0 40. LF 0 41. RF 0 42. LR 0 43. RR 0

44. BL 0 45. Roof 0 46. Other 0

(0) No glazing contact and no damage, or no glazing

(1) Fixed

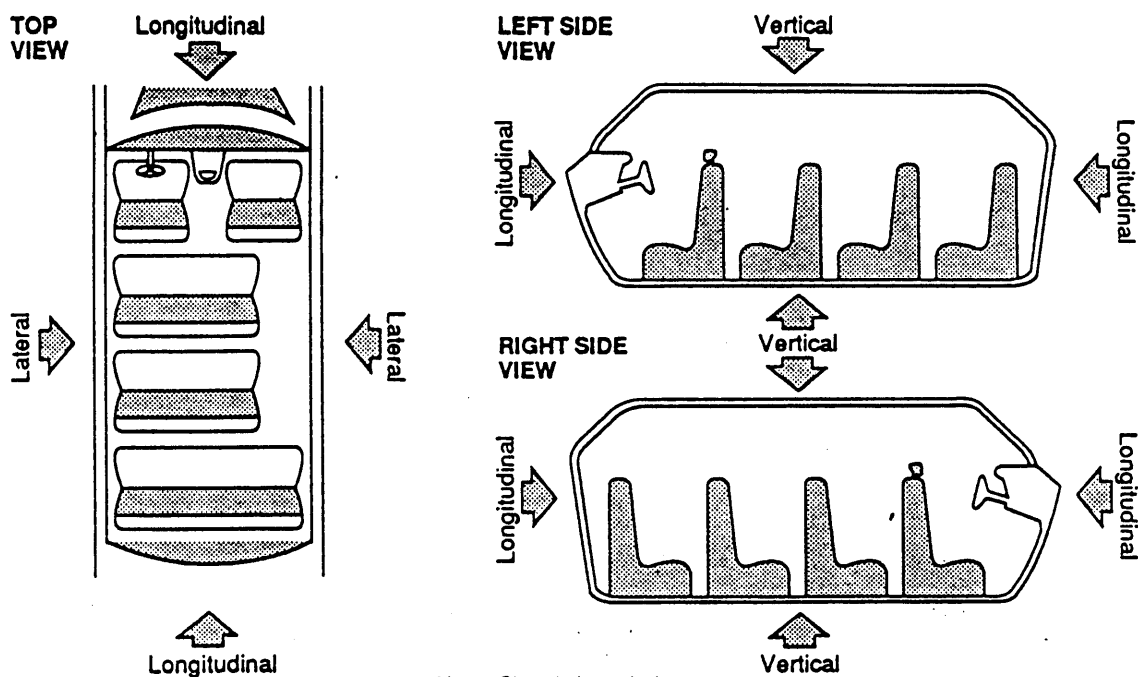
(2) Closed

(3) Partially opened

(4) Fully opened

(9) Unknown

## INTRUSION WORK SHEET



LOCATION OF INTRUSION	INTRUDED COMPONENT	COMPARISON VALUE	INTRUDED VALUE	INTRUSION	DOMINANT CRUSH DIRECTION
- NO	INTRUSION	-	=		
		-	=		
		-	=		
		-	=		
		-	=		
		-	=		
		-	=		
		-	=		
		-	=		
		-	=		
		-	=		
		-	=		
		-	=		
		-	=		
		-	=		

Document no more than the 15 most severe intrusions

**OCCUPANT AREA INTRUSION**

Note: If no intrusions, leave variables IV 47-IV 86 blank.

	<u>Location of Intrusion</u>	<u>Intruding Component</u>	<u>Magnitude of Intrusion</u>	<u>Dominant Crush Direction</u>
1st	47. _____	48. _____	49. _____	50. _____
2nd	51. _____	52. _____	53. _____	54. _____
3rd	55. _____	56. _____	57. _____	58. _____
4th	59. _____	60. _____	61. _____	62. _____
5th	63. _____	64. _____	65. _____	66. _____
6th	67. _____	68. _____	69. _____	70. _____
7th	71. _____	72. _____	73. _____	74. _____
8th	75. _____	76. _____	77. _____	78. _____
9th	79. _____	80. _____	81. _____	82. _____
10th	83. _____	84. _____	85. _____	86. _____

**LOCATION OF INTRUSION****Front Seat**

- (11) Left  
(12) Middle  
(13) Right

**Fourth Seat**

- (41) Left  
(42) Middle  
(43) Right

**Second Seat**

- (21) Left  
(22) Middle  
(23) Right

- (97) Catastrophic  
(98) Other enclosed area (specify): \_\_\_\_\_

**Third Seat**

- (31) Left  
(32) Middle  
(33) Right

- (99) Unknown

**INTRUDING COMPONENT****Interior Components**

- (01) Steering assembly  
(02) Instrument panel left  
(03) Instrument panel center  
(04) Instrument panel right  
(05) Toe pan  
(06) A-pillar  
(07) B-pillar  
(08) C-pillar  
(09) D-pillar  
(10) Door panel  
(12) Roof (or convertible top)  
(13) Roof side rail  
(14) Windshield  
(15) Windshield header  
(16) Window frame  
(17) Floor pan  
(18) Backlight header  
(19) Front seat back  
(20) Second seat back  
(21) Third seat back  
(22) Fourth seat back  
(23) Fifth seat back  
(24) Seat cushion  
(25) Back panel or door surface  
(26) Other interior component (specify): \_\_\_\_\_

- (27) Side panel - forward of the A-pillar  
(28) Side panel - rear of the A-pillar

**Exterior Components**

- (30) Hood  
(31) Outside surface of vehicle (specify): \_\_\_\_\_  
(32) Other exterior object in the environment (specify): \_\_\_\_\_  
(33) Unknown exterior object  
(97) Catastrophic  
(98) Intrusion of unlisted component(s) (specify): \_\_\_\_\_  
(99) Unknown

**MAGNITUDE OF INTRUSION**

- (1)  $\geq 1$  inch but  $< 3$  inches  
(2)  $\geq 3$  inches but  $< 6$  inches  
(3)  $\geq 6$  inches but  $< 12$  inches  
(4)  $\geq 12$  inches but  $< 18$  inches  
(5)  $\geq 18$  inches but  $< 24$  inches  
(6)  $\geq 24$  inches  
(7) Catastrophic  
(9) Unknown

**DOMINANT CRUSH DIRECTION**

- (1) Vertical  
(2) Longitudinal  
(3) Lateral  
(7) Catastrophic  
(9) Unknown



## STEERING COLUMN WORKING DIAGRAMS

### STEERING COLUMN COLLAPSE

#### Steering Column Shear Module Movement



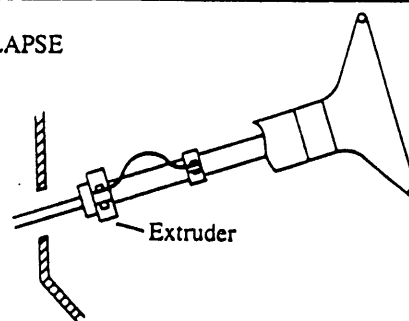
SHEAR CAPSULE

Left \_\_\_\_



Right \_\_\_\_ V = \_\_\_\_"

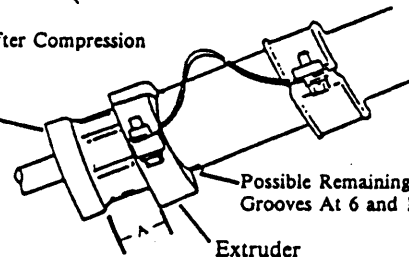
Direction and Magnitude of Steering Column Movement



Extruder

After Compression

Flare Tube



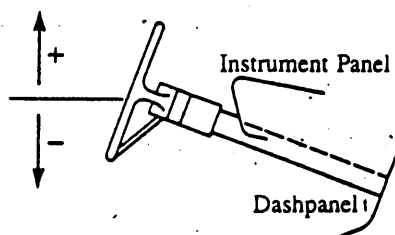
Possible Remaining Starter Grooves At 6 and 12 o'clock

Extruder

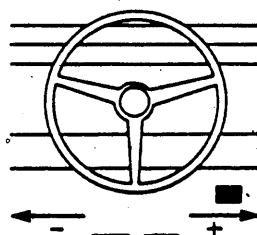
Compression = Measurement A A = \_\_\_\_

### STEERING COLUMN MOVEMENT

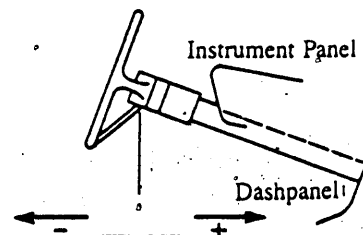
#### Vertical Movement



#### Lateral Movement



#### Longitudinal Movement



	COMPARISON VALUE	-	DAMAGED VALUE	=	MOVEMENT
VERTICAL		-		=	N/A
LATERAL		-		=	
LONGITUDINAL		-		=	

### STEERING RIM/SPOKE DEFORMATION

COMPARISON VALUE	-	DAMAGED VALUE	=	DEFORMATION
	-		=	N/A
	-		=	

## STEERING COLUMN

## 87. Steering Column Type

- (1) Fixed column  
 (2) Tilt column  
 (3) Telescoping column  
 (4) Tilt and telescoping column  
 (8) Other column type (specify): \_\_\_\_\_

(9) Unknown

If PDOF  $\neq$  11, 12 or 1, Then Code IV88-IV91 As 96

## 88. Steering Column Collapse Due to Occupant Loading

\_\_\_\_\_ Code actual measured movement to the nearest inch. See coding manual for measurement technique(s).

- (00) No movement, compression, or collapse  
 (01-19) Actual measured value  
 (20) 20 inches or greater

Estimated movement from observation

- (81) Less than 1 inch  
 (82)  $\geq$  1 inch but  $<$  2 inches  
 (83)  $\geq$  2 inches but  $<$  4 inches  
 (84)  $\geq$  4 inches but  $<$  6 inches  
 (85)  $\geq$  6 inches but  $<$  8 inches  
 (86) Greater than or equal to 8 inches  
 (96) Not assessed (PDOF  $\neq$  11, 12, 1)  
 (97) Apparent movement, value undetermined or cannot be measured or estimated  
 (98) Nonspecified type column  
 (99) Unknown

## Direction And Magnitude of Steering Column Movement

## 89. Vertical Movement

## 90. Lateral Movement

## 91. Longitudinal Movement

Code the actual measured movement to the nearest inch. See Coding Manual for measurement technique(s)

- (00) No steering column movement  
 ( $\pm$ 01 -  $\pm$ 49) Actual measured value  
 ( $\pm$ 50) 50 inches or greater

Estimated movement from observation

- ( $\pm$ 81)  $\geq$  1 inch but  $<$  3 inches  
 ( $\pm$ 82)  $\geq$  3 inches but  $<$  6 inches  
 ( $\pm$ 83)  $\geq$  6 inches but  $<$  12 inches  
 ( $\pm$ 84)  $\geq$  12 inches  
 (96) Not assessed (PDOF  $\neq$  11, 12, 1)  
 (97) Apparent movement  $>$  1 inch but cannot be measured or estimated  
 (99) Unknown

## 92. Steering Rim/Spoke Deformation

\_\_\_\_\_ Code actual measured deformation to the nearest inch.

- (0) No steering rim deformation  
 (1-5) Actual measured value  
 (6) 6 inches or more  
 (8) Observed deformation cannot be measured  
 (9) Unknown

## 93. Location of Steering Rim/Spoke Deformation

- (00) No steering rim deformation

Quarter Sections

- (01) Section A  
 (02) Section B  
 (03) Section C  
 (04) Section D



Half Sections

- (05) Upper half of rim/spoke  
 (06) Lower half of rim/spoke  
 (07) Left half of rim/spoke  
 (08) Right half of rim/spoke



- (09) Complete steering wheel collapse  
 (10) Undetermined location  
 (99) Unknown

## INSTRUMENT PANEL

## 94. Odometer Reading

4586 miles - Code mileage to the nearest 1,000 miles

- (000) No odometer  
 (001) Less than 1,500 miles  
 (300) 299,500 miles or more  
 (999) Unknown

Source: \_\_\_\_\_

## 95. Instrument Panel Damage from Occupant Contact?

- (0) No  
 (1) Yes  
 (9) Unknown

## 96. Knee Bolsters Deformed from Occupant Contact?

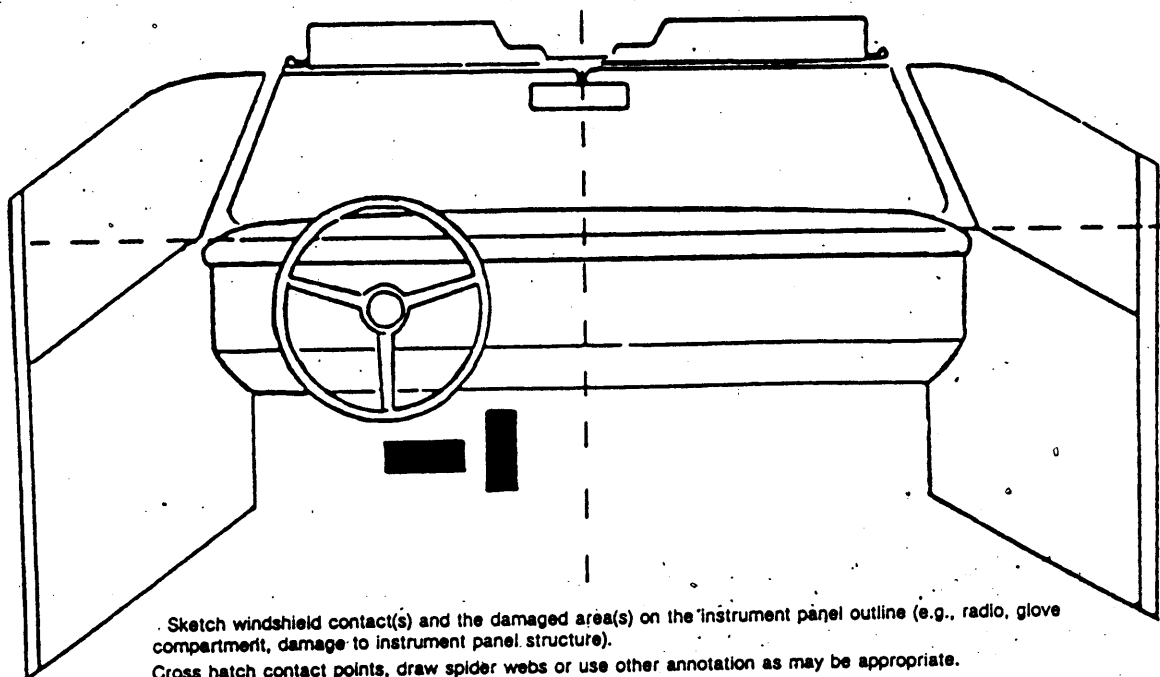
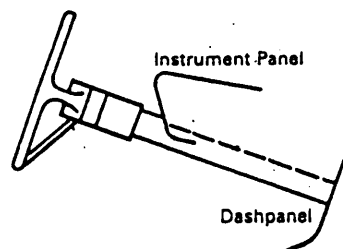
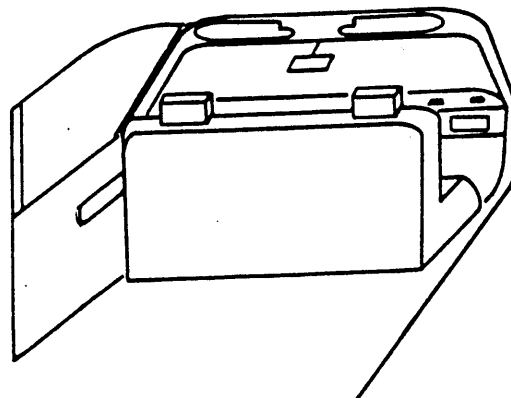
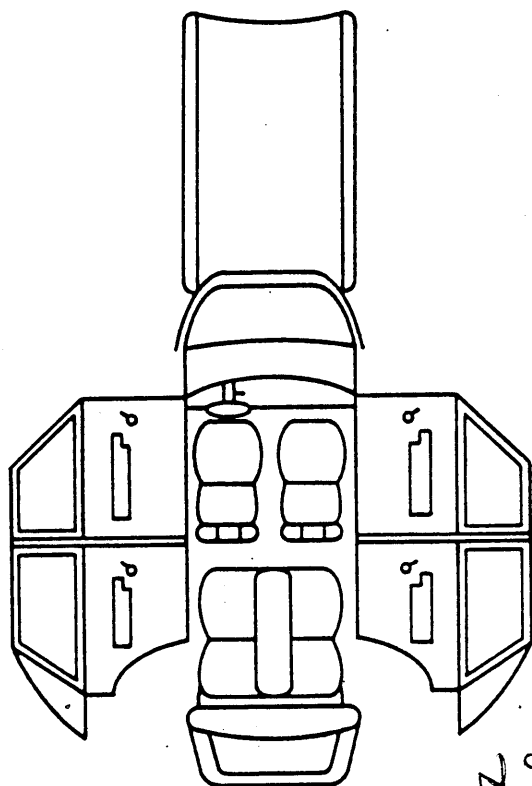
- (0) No  
 (1) Yes  
 (8) Not present  
 (9) Unknown

## 97. Did Glove Compartment Door Open During Collision(s)?

- (0) No  
 (1) Yes  
 (8) Not present  
 (9) Unknown

## VEHICLE INTERIOR SKETCHES

Note area of ejection/entrapment



Sketch windshield contact(s) and the damaged area(s) on the instrument panel outline (e.g., radio, glove compartment, damage to instrument panel structure).  
 Cross hatch contact points, draw spider webs or use other annotation as may be appropriate.  
 Annotate the contacted area with a letter (begin with A) and list on the Points of Occupant Contact page.

## POINTS OF OCCUPANT CONTACT

Contact	Interior Component Contacted	Occupant No. If Known	Body Region If Known	Supporting Physical Evidence	Confidence Level of Contact Point
A					
B					
C					
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
N					

## CODES FOR INTERIOR COMPONENTS

## FRONT

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): \_\_\_\_\_

## LEFT SIDE

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): \_\_\_\_\_
- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify): \_\_\_\_\_

## RIGHT SIDE

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): \_\_\_\_\_
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (37) Other right side object (specify): \_\_\_\_\_

## INTERIOR

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): \_\_\_\_\_
- (44) Head restraint system
- (45) Air bag
- (46) Other occupants (specify): \_\_\_\_\_
- (47) Interior loose objects

- (48) Child safety seat (specify): \_\_\_\_\_

- (49) Other interior object (specify): \_\_\_\_\_

## ROOF

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

## FLOOR

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

## REAR

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): \_\_\_\_\_

## CONFIDENCE LEVEL OF CONTACT POINT

- (1) Certain
- (2) Probable
- (3) Possible
- (4) Unknown

**MANUAL RESTRAINTS**

**NOTES:** Encode the applicable data for each seat position in the vehicle. The attributes for the variables may be found below. Restraint systems should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

If a child safety seat is present, encode the data on the back of this page.

If the vehicle has automatic restraints available, encode the appropriate data on the back of the previous page.

		Left	Center	Right
FIRST	Availability	4	0	4
	Use	00		00
	Failure Modes	0		0
SECOND	Availability	4		4
	Use	00		00
	Failure Modes	0		0
THIRD	Availability			
	Use			
	Failure Modes			
OTHER	Availability			
	Use			
	Failure Modes			

**Manual (Active) Belt System Availability**

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available — type unknown
- (8) Other belt (specify):

(9) Unknown

**Manual (Active) Belt System Use**

- (00) None used, not available, or belt removed/destroyed
- (01) Inoperative (specify):

- (02) Shoulder belt
- (03) Lap belt
- (04) Lap and shoulder belt
- (05) Belt used — type unknown

**(08) Other belt used (specify):**

- (12) Shoulder belt used with child safety seat
- (13) Lap belt used with child safety seat
- (14) Lap and shoulder belt used with child safety seat
- (15) Belt used with child safety seat — type unknown
- (18) Other belt used with child safety seat (specify):

(99) Unknown if belt used

**Manual (Active) Belt Failure Modes During Accident**

- (0) No manual belt used or not available
- (1) No manual belt failure(s)
- (2) Torn webbing (stretched webbing not included)
- (3) Broken buckle or latchplate
- (4) Upper anchorage separated
- (5) Other anchorage separated (specify):

- (6) Broken retractor
- (7) Combination of above (specify):

(8) Other manual belt failure (specify):

(9) Unknown

**CHILD SAFETY SEAT FIELD ASSESSMENT**

When a child safety seat is present enter the occupant's number in the first row and complete the column below the occupant's number using the codes listed below. Complete a column for each child safety seat present.

Occupant Number						
1. Type of Child Safety Seat						
2. Child Safety Seat Orientation						
3. Child Safety Seat Harness Usage						
4. Child Safety Seat Shield Usage						
5. Child Safety Seat Tether Usage						
6. Child Safety Seat Make/Model	Specify Below for Each Child Safety Seat					

**1. Type of Child Safety Seat**

- (0) No child safety seat
- (1) Infant seat
- (2) Toddler seat
- (3) Convertible seat
- (4) Booster seat
- (7) Other type child safety seat (specify):  
\_\_\_\_\_

- (8) Unknown child safety seat type
- (9) Unknown if child safety seat used

**2. Child Safety Seat Orientation**

- (00) No child safety seat
- Designed for Rear Facing for This Age/Weight
- (01) Rear facing
- (02) Forward facing
- (03) Other orientation (specify):  
\_\_\_\_\_
- (04) Unknown orientation
- Designed for Forward Facing for This Age/Weight
- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):  
\_\_\_\_\_

- (19) Unknown orientation

Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight

- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):  
\_\_\_\_\_

- (29) Unknown orientation

- (99) Unknown if child safety seat used

**3. Child Safety Seat Harness Usage****4. Child Safety Seat Shield Usage****5. Child Safety Seat Tether Usage**

Note: Options Below Are Used for Variables 3-5.

- (00) No child safety seat

Not Designed with Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
- (02) After market harness/shield/tether used
- (03) Child safety seat used, but no after market harness/shield/tether added
- (09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether

- (11) Harness/shield/tether not used
- (12) Harness/shield/tether used
- (19) Unknown if harness/shield/tether used

Unknown if Designed with Harness/Shield/Tether

- (21) Harness/shield/tether not used
- (22) Harness/shield/tether used
- (29) Unknown if harness/shield/tether used

- (99) Unknown if child safety seat used

**6. Child Safety Seat Make/Model**

(Specify make/model and occupant number)

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## National Accident Sampling System – Crashworthiness Data System: Interior Vehicle Form

Page 7

## HEAD RESTRAINTS/SEAT EVALUATION

NOTES: Encode the applicable data for each seat position in the vehicle. The attributes for these variables may be found at the bottom of the page. Head restraint type/damage and seat type/performance should be assessed during the vehicle inspection then coded on the Occupant Assessment Form.

		Left	Center	Right
FIRST	Head Restraint Type/Damage	1	0	1
	Seat Type	02	0	02
	Seat Performance	1	0	1
SECOND	Head Restraint Type/Damage	0	0	0
	Seat Type	04	0	04
	Seat Performance	1	0	1
THIRD	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			
OTHER	Head Restraint Type/Damage			
	Seat Type			
	Seat Performance			

## Head Restraint Type/Damage by Occupant at This Occupant Position

- (0) No head restraints
- (1) Integral – no damage
- (2) Integral – damaged during accident
- (3) Adjustable – no damage
- (4) Adjustable – damaged during accident
- (5) Add-on – no damage
- (6) Add-on – damaged during accident
- (8) Other (specify): \_\_\_\_\_
- (9) Unknown

## Seat Type (This Occupant Position)

- (00) No seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., van type)
- (09) Other seat type (specify): \_\_\_\_\_
- (99) Unknown

## Seat Performance (This Occupant Position)

- (0) No seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks failed
- (4) Seat tracks/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify): \_\_\_\_\_

- (7) Combination of above (specify): \_\_\_\_\_
- (8) Other (specify): \_\_\_\_\_

- (9) Unknown

DESCRIBE ANY INDICATION OF ABNORMAL OCCUPANT POSTURE (I.E. UNUSUAL OCCUPANT CONTACT PATTERN)



**EJECTION/ENTRAPMENT DATA**

Complete the following if the researcher has any indications that an occupant was either ejected from or entrapped in the vehicle. Code the appropriate data on the Occupant Assessment Form.

**EJECTION** No ☒ Yes [ ]

Describe indications of ejection and body parts involved in partial ejection(s):

---



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---

Occupant Number						
Ejection						
(Note on Vehicle Interior Sketch) Ejection Area						
Ejection Medium						
Medium Status						

**Ejection**

- (1) Complete ejection
- (2) Partial ejection
- (3) Ejection, unknown degree
- (9) Unknown

**Ejection Area**

- (1) Windshield
- (2) Left front
- (3) Right front
- (4) Left rear
- (5) Right rear
- (6) Rear

**(7) Roof**

- (8) Other area (e.g., back of pickup, etc.) (specify):

- (9) Unknown

**Ejection Medium**

- (1) Door/hatch/tailgate
- (2) Nonfixed roof structure
- (3) Fixed glazing
- (4) Nonfixed glazing (specify):

**(5) Integral structure**

- (8) Other medium (specify):

- (9) Unknown

**Medium Status (Immediately Prior to Impact)**

- (1) Open
- (2) Closed
- (3) Integral structure
- (9) Unknown

**ENTRAPMENT** No ☒ Yes [ ]

Describe entrapment mechanism:

---



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Component(s):

---

(Note in vehicle interior diagram)



# OCCUPANT ASSESSMENT FORM

1. Primary Sampling Unit Number NC5I  
2. Case Number—Stratum 90-08  
3. Vehicle Number 01  
4. Occupant Number 01

## OCCUPANT'S CHARACTERISTICS

5. Occupant's Age 19  
Code actual age at time of accident.  
(00) Less than one year old (specify by month): \_\_\_\_\_  
(97) 97 years and older  
(99) Unknown  
6. Occupant's Sex 1  
(1) Male  
(2) Female  
(9) Unknown  
7. Occupant's Height 74  
Code actual height to the nearest inch.  
(99) Unknown  
8. Occupant's Weight 200  
Code actual weight to the nearest pound.  
(999) Unknown  
9. Occupant's Role 1  
(1) Driver  
(2) Passenger  
(9) Unknown  
10. Occupant's Seat Position 11  
Front Seat  
(11) Left side  
(12) Middle  
(13) Right side  
(14) Other (specify): \_\_\_\_\_  
Second Seat  
(21) Left side  
(22) Middle  
(23) Right side  
(24) Other (specify): \_\_\_\_\_  
Third Seat  
(31) Left side  
(32) Middle  
(33) Right side  
(34) Other (specify): \_\_\_\_\_  
Fourth Seat  
(41) Left side  
(42) Middle  
(43) Right side  
(44) Other (specify): \_\_\_\_\_  
(97) In or on unenclosed area  
(98) Other seat (specify): \_\_\_\_\_  
(99) Unknown

11. Occupant's Posture 0  
(0) Normal posture  
(1) Abnormal posture (specify): \_\_\_\_\_  
(9) Unknown

## EJECTION/ENTRAPMENT

12. Ejection 0  
(0) No ejection  
(1) Complete ejection  
(2) Partial ejection  
(3) Ejection, unknown degree  
(9) Unknown  
13. Ejection Area 0  
(0) No ejection  
(1) Windshield  
(2) Left front  
(3) Right front  
(4) Left rear  
(5) Right rear  
(6) Rear  
(7) Roof  
(8) Other area (e.g., back of pickup, etc.)  
(specify): \_\_\_\_\_  
(9) Unknown  
14. Ejection Medium 0  
(0) No ejection  
(1) Door/hatch/tailgate  
(2) Nonfixed roof structure  
(3) Fixed glazing  
(4) Nonfixed glazing (specify): \_\_\_\_\_  
(5) Integral structure  
(8) Other medium (specify): \_\_\_\_\_  
(9) Unknown  
15. Medium Status (Immediately Prior to Impact) 0  
(0) No ejection  
(1) Open  
(2) Closed  
(3) Integral structure  
(9) Unknown  
16. Entrapment 0  
(NOTE: Entrapped means that part of the person was in the vehicle and mechanically restrained; jammed doors and immobilizing injuries by themselves are not sufficient to constitute entrapment.)  
(0) Not entrapped  
(1) Entrapped  
(9) Unknown

## RESTRAINT SYSTEM AND SEAT EVALUATION

17. Manual (Active) Belt System Availability 4

- (0) Not available
- (1) Belt removed/destroyed
- (2) Shoulder belt
- (3) Lap belt
- (4) Lap and shoulder belt
- (5) Belt available—type unknown
- (8) Other belt (specify): \_\_\_\_\_

(9) Unknown

18. Manual (Active) Belt System Use 00

(00) None used, not available, or belt removed/destroyed

(01) Inoperative (specify): NOT THIS TRIP

(02) Shoulder belt

(03) Lap belt

(04) Lap and shoulder belt

(05) Belt used—type unknown

(08) Other belt used (specify): \_\_\_\_\_

(12) Shoulder belt used with child safety seat

(13) Lap belt used with child safety seat

(14) Lap and shoulder belt used with child safety seat

(15) Belt used with child safety seat—type unknown

(18) Other belt used with child safety seat

(specify): \_\_\_\_\_

(99) Unknown if belt used

19. Proper Use of Manual (Active) Belts 0

(0) None used or not available

(1) Belt used properly

(2) Belt used properly with child safety seat

Belt Used Improperly

(3) Shoulder belt worn under arm

(4) Shoulder belt worn behind back or seat

(5) Belt worn around more than one person

(6) Lap belt worn on abdomen

(7) Lap belt or lap and shoulder belt used improperly with child safety seat (specify): \_\_\_\_\_

(8) Other improper use of manual belt system (specify): \_\_\_\_\_

(9) Unknown

20. Manual (Active) Belt Failure Modes During Accident 0

(0) No manual belt used or not available.

(1) No manual belt failure(s)

(2) Torn webbing (stretched webbing not included)

(3) Broken buckle or latchplate

(4) Upper anchorage separated

(5) Other anchorage separated (specify): \_\_\_\_\_

(6) Broken retractor

(7) Combination of above (specify): \_\_\_\_\_

(8) Other manual belt failure (specify): \_\_\_\_\_

(9) Unknown

21. Automatic (Passive) Restraint System Availability 1

(0) Not equipped/not available

(1) Airbag

(2) Airbag disconnected (specify): \_\_\_\_\_

(3) Airbag not reinstalled

(4) 2 point automatic belts

(5) 3 point automatic belts

(6) Automatic belts destroyed or rendered inoperative

(9) Unknown

22. Automatic (Passive) Restraint Function 4

(0) Not equipped/not available

Automatic Belt

(1) Automatic belt in use

(2) Automatic belt not in use

(3) Automatic belt use unknown

Air Bag

(4) Airbag deployed during accident

(5) Airbag deployed inadvertently just prior to accident

(6) Deployed, accident sequence undetermined

(7) Nondeployed

(8) Unknown if deployed

(9) Unknown

23. Did Automatic (Passive) Restraint Fail? 1

(0) Not equipped/not available

(1) No

(2) Yes (specify): \_\_\_\_\_

(9) Unknown

24. Police Reported Restraint Use 0

(0) None used

(1) Police did not indicate restraint use

(2) Shoulder belt

(3) Lap belt

(4) Lap and shoulder belt

(5) Belt used, type not specified

(6) Child safety seat

(7) Other or automatic restraint (specify): \_\_\_\_\_

(8) Restrained, type unknown

(9) Police indicated "unknown"

25. Head Restraint Type/Damage by Occupant at This Occupant Position 1

(0) No head restraints

(1) Integral—no damage

(2) Integral—damaged during accident

(3) Adjustable—no damage

(4) Adjustable—damaged during accident

(5) Add-on—no damage

(6) Add-on—damaged during accident

(8) Other (specify): \_\_\_\_\_

(9) Unknown

**26. Seat Type (This Occupant Position)** 0 2

- (00) Occupant not seated or no seat
- (01) Bucket
- (02) Bucket with folding back
- (03) Bench
- (04) Bench with separate back cushions
- (05) Bench with folding back(s)
- (06) Split bench with separate back cushions
- (07) Split bench with folding back(s)
- (08) Pedestal (i.e., van type)
- (09) Other seat type (specify):

\_\_\_\_\_

(99) Unknown

**27. Seat Performance (This Occupant Position)** 1

- (0) Occupant not seated or no seat
- (1) No seat performance failure(s)
- (2) Seat adjusters failed
- (3) Seat back folding locks failed
- (4) Seat track/anchors failed
- (5) Deformed by impact of occupant
- (6) Deformed by passenger compartment intrusion (specify):

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

(7) Combination of above (specify):

\_\_\_\_\_

(8) Other (specify):

\_\_\_\_\_

(9) Unknown

**CHILD SAFETY SEAT****28. Child Safety Seat Make/Model** 0 0 0

- (000) No child safety seat
- Applicable codes are found in your NASS CDS Data Collection, Coding, and Editing Manual
- (997) Other make/model (specify):

\_\_\_\_\_

(998) Unknown make/model

(999) Unknown if child safety seat used

**29. Type of Child Safety Seat** 0

- (0) No child safety seat
- (1) Infant seat
- (2) Toddler seat
- (3) Convertible seat
- (4) Booster seat
- (7) Other type child safety seat (specify):

\_\_\_\_\_

(8) Unknown child safety seat type

(9) Unknown if child safety seat used

**30. Child Safety Seat Orientation** 0 0

- (00) No child safety seat

Designed for Rear Facing for This Age/Weight

- (01) Rear facing
- (02) Forward facing
- (08) Other orientation (specify):

\_\_\_\_\_

(09) Unknown orientation

Designed for Forward Facing for This Age/Weight

- (11) Rear facing
- (12) Forward facing
- (18) Other orientation (specify):

\_\_\_\_\_

(19) Unknown orientation

Unknown Design or Orientation for This Age/Weight, or Unknown Age/Weight

- (21) Rear facing
- (22) Forward facing
- (28) Other orientation (specify):

\_\_\_\_\_

(29) Unknown orientation

(99) Unknown if child safety seat used

**31. Child Safety Seat Harness Usage** 0 0**32. Child Safety Seat Shield Usage** 0 0**33. Child Safety Seat Tether Usage** 0 0

Note: Options below applicable to Variables OA31-OA33.

- (00) No child safety seat

Not Designed with  
Harness/Shield/Tether

- (01) After market harness/shield/tether added, not used
- (02) After market harness/shield/tether used
- (03) Child safety seat used, but no after market harness/shield/tether added
- (09) Unknown if harness/shield/tether added or used

Designed with Harness/Shield/Tether

- (11) Harness/shield/tether not used
- (12) Harness/shield/tether used
- (19) Unknown if harness/shield/tether used

Unknown If Designed with Harness/Shield/Tether

- (21) Harness/shield/tether not used
- (22) Harness/shield/tether used
- (29) Unknown if harness/shield/tether used

(99) Unknown if child safety seat used

**INJURY CONSEQUENCES****34. Injury Severity (Police Rating)** 0

- (0) O - No injury
- (1) C - Possible injury
- (2) B - Nonincapacitating injury
- (3) A - Incapacitating injury
- (4) K - Killed
- (5) U - Injury, severity unknown
- (6) Died prior to accident
- (9) Unknown

**35. Treatment - Mortality** 6

- (0) No treatment
- (1) Fatal
- (2) Fatal - ruled disease

Nonfatal

- (3) Hospitalized
- (4) Transported and released
- (5) Treatment at scene - nontransported
- (6) Treatment later

(8) Treatment - other (specify):

PRIVATE PHYSICAL - NEXT DAY

(9) Unknown

**36. Type of Medical Facility (for Initial Treatment)** 4

- (0) Not treated at a medical facility
- (1) Trauma center
- (2) Hospital
- (3) Medical clinic
- (4) Physician's office
- (5) Treatment later at medical facility
- (8) Other (specify):

(9) Unknown

**37. Hospital stay** 00

Code number of days (up through 60)  
that the occupant stayed in the hospital

- (00) Not hospitalized
- (61) 61 days or more
- (99) Unknown

**38. Working Days Lost** 00

Code the number of days  
(up through 60) that the occupant  
lost from work due to the accident

- (00) No working days lost
- (61) 61 days or more
- (62) Fatally injured
- (97) Not working prior to accident
- (99) Unknown

**39. Time to Death** 00

Code number of hours from time of  
accident to time of death up through 24  
hours. If time of death is greater than 24  
hours, code number of days. (Note: 1 day =  
24 hours, 2 days = 48, ... n days = 24 + n up through  
30 days = 720)

- (00) Not fatal
- (96) Fatal - ruled disease
- (99) Unknown

**40. 1st Medically Reported Cause of Death** 00**41. 2nd Medically Reported Cause of Death** 00**42. 3rd Medically Reported Cause of Death** 00

Code the Occupant Injury from line  
number(s) for the medically reported  
injury(s) which reportedly contributed to  
this occupant's death

- (00) Not fatal or no additional causes
- (97) Other result (specify):

(99) Unknown

**43. Number of Recorded Injuries for This Occupant** 00

Code the actual number of  
injuries recorded for this occupant.

- (00) No recorded injuries
- (97) Injured, details unknown
- (99) Unknown if injured

UPDATE CANDIDATE

NO ☒ YES ☐

\*\*\* STOP HERE \*\*\*

IF THERE ARE NO RECORDED INJURIES

(I.E., OA43=00, 97, 99)



U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

## OCCUPANT INJURY FORM

Form Approved  
O.M.B. No. 2127-0021  
NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

1. Primary Sampling Unit Number NCSI 3. Vehicle Number 01  
2. Case Number—Stratum 90-08 4. Occupant Number 01

### INJURY DATA

Record below the actual injuries sustained by this occupant that were identified from the official and unofficial data sources. Remember not to double count an injury just because it was identified from two different sources. If greater than ten injuries have been documented, encode the balance on the Occupant Injury Supplement.

	O.I.C.—A.I.S.						Injury Source	Injury Source Confidence Level	Direct/Indirect Injury	Occupant Area Intrusion No.
	Source of Injury Data	Body Region	Aspect	Lesion	System Organ	A.I.S. Severity				
1st	5. <u>0</u>	6. <u>0</u>	7. <u>0</u>	8. <u>0</u>	9. <u>0</u>	10. <u>0</u>	11. <u>00</u>	12. <u>0</u>	13. <u>0</u>	14. <u>00</u>
2nd	15. <u>  </u>	16. <u>  </u>	17. <u>  </u>	18. <u>  </u>	19. <u>  </u>	20. <u>  </u>	21. <u>  </u>	22. <u>  </u>	23. <u>  </u>	24. <u>  </u>
3rd	25. <u>  </u>	26. <u>  </u>	27. <u>  </u>	28. <u>  </u>	29. <u>  </u>	30. <u>  </u>	31. <u>  </u>	32. <u>  </u>	33. <u>  </u>	34. <u>  </u>
4th	35. <u>  </u>	36. <u>  </u>	37. <u>  </u>	38. <u>  </u>	39. <u>  </u>	40. <u>  </u>	41. <u>  </u>	42. <u>  </u>	43. <u>  </u>	44. <u>  </u>
5th	45. <u>  </u>	46. <u>  </u>	47. <u>  </u>	48. <u>  </u>	49. <u>  </u>	50. <u>  </u>	51. <u>  </u>	52. <u>  </u>	53. <u>  </u>	54. <u>  </u>
6th	55. <u>  </u>	56. <u>  </u>	57. <u>  </u>	58. <u>  </u>	59. <u>  </u>	60. <u>  </u>	61. <u>  </u>	62. <u>  </u>	63. <u>  </u>	64. <u>  </u>
7th	65. <u>  </u>	66. <u>  </u>	67. <u>  </u>	68. <u>  </u>	69. <u>  </u>	70. <u>  </u>	71. <u>  </u>	72. <u>  </u>	73. <u>  </u>	74. <u>  </u>
8th	75. <u>  </u>	76. <u>  </u>	77. <u>  </u>	78. <u>  </u>	79. <u>  </u>	80. <u>  </u>	81. <u>  </u>	82. <u>  </u>	83. <u>  </u>	84. <u>  </u>
9th	85. <u>  </u>	86. <u>  </u>	87. <u>  </u>	88. <u>  </u>	89. <u>  </u>	90. <u>  </u>	91. <u>  </u>	92. <u>  </u>	93. <u>  </u>	94. <u>  </u>
10th	95. <u>  </u>	96. <u>  </u>	97. <u>  </u>	98. <u>  </u>	99. <u>  </u>	100. <u>  </u>	101. <u>  </u>	102. <u>  </u>	103. <u>  </u>	104. <u>  </u>

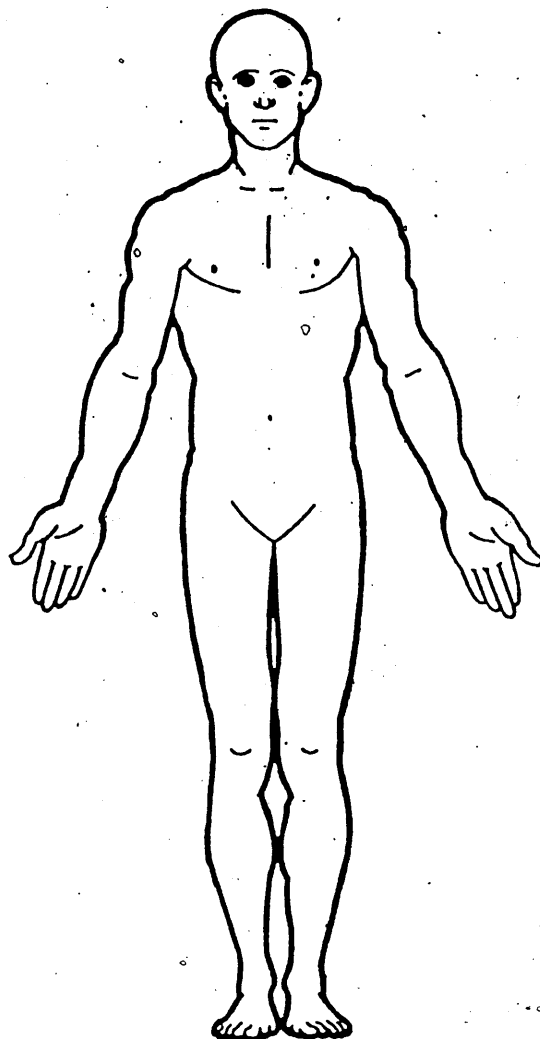
## OCCUPANT INJURY DATA

	Source of Injury Data	O.I.C.—A.I.S.					Injury Source	Injury Source Confidence Level	Direct/ Indirect Injury	Occupant Area Intrusion No.
		Body Region	Aspect	Lesion	System Organ	A.I.S. Severity				
11th	—	—	—	—	—	—	—	—	—	—
12th	—	—	—	—	—	—	—	—	—	—
13th	—	—	—	—	—	—	—	—	—	—
14th	—	—	—	—	—	—	—	—	—	—
15th	—	—	—	—	—	—	—	—	—	—
16th	—	—	—	—	—	—	—	—	—	—
17th	—	—	—	—	—	—	—	—	—	—
18th	—	—	—	—	—	—	—	—	—	—
19th	—	—	—	—	—	—	—	—	—	—
20th	—	—	—	—	—	—	—	—	—	—
21st	—	—	—	—	—	—	—	—	—	—
22nd	—	—	—	—	—	—	—	—	—	—
23rd	—	—	—	—	—	—	—	—	—	—

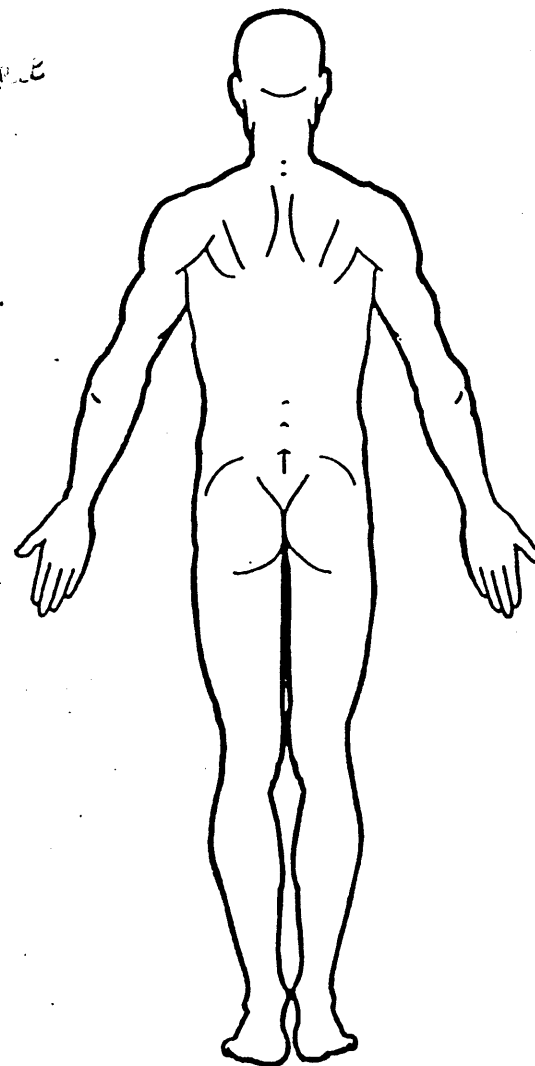


**OFFICIAL INJURY DATA—SOFT TISSUE INJURIES**

Indicate the *Location, Lesion, Detail* (size, depth, fracture type, head injury clinical signs and neurological deficits), and *Source* of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)



NONE  
AVAILABLE



**SOURCE OF INJURY DATA****OFFICIAL**

- (1) Autopsy records with or without hospital medical records
- (2) Hospital medical records other than emergency room (eg. discharge summary)
- (3) Emergency room records only (including associated X-rays or other lab reports)
- (4) Private physician, walk-in or emergency clinic

**UNOFFICIAL**

- (5) Lay coroner report
- (6) E.M.S. personnel
- (7) Interviewee
- (8) Other source (specify): \_\_\_\_\_
- (9) Police

**INJURY SOURCE****FRONT**

- (01) Windshield
- (02) Mirror
- (03) Sunvisor
- (04) Steering wheel rim
- (05) Steering wheel hub/spoke
- (06) Steering wheel (combination of codes 04 and 05)
- (07) Steering column, transmission selector lever, other attachment
- (08) Add-on equipment (e.g., CB, tape deck, air conditioner)
- (09) Left instrument panel and below
- (10) Center instrument panel and below
- (11) Right instrument panel and below
- (12) Glove compartment door
- (13) Knee bolster
- (14) Windshield including one or more of the following: front header, A-pillar, instrument panel, mirror, or steering assembly (driver side only)
- (15) Windshield including one or more of the following: front header, A-pillar, instrument panel, or mirror (passenger side only)
- (16) Other front object (specify): \_\_\_\_\_

**LEFT SIDE**

- (20) Left side interior surface, excluding hardware or armrests
- (21) Left side hardware or armrest
- (22) Left A pillar
- (23) Left B pillar
- (24) Other left pillar (specify): \_\_\_\_\_
- (25) Left side window glass or frame

- (26) Left side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, or roof side rail
- (27) Other left side object (specify): \_\_\_\_\_

**RIGHT SIDE**

- (30) Right side interior surface, excluding hardware or armrests
- (31) Right side hardware or armrest
- (32) Right A pillar
- (33) Right B pillar
- (34) Other right pillar (specify): \_\_\_\_\_
- (35) Right side window glass or frame
- (36) Right side window glass including one or more of the following: frame, window sill, A-pillar, B-pillar, roof side rail
- (37) Other right side object (specify): \_\_\_\_\_

**INTERIOR**

- (40) Seat, back support
- (41) Belt restraint webbing/buckle
- (42) Belt restraint B-pillar attachment point
- (43) Other restraint system component (specify): \_\_\_\_\_
- (44) Head restraint system
- (45) Air bag
- (46) Other occupants (specify): \_\_\_\_\_
- (47) Interior loose objects
- (48) Child safety seat (specify): \_\_\_\_\_
- (49) Other interior object (specify): \_\_\_\_\_

**ROOF**

- (50) Front header
- (51) Rear header
- (52) Roof left side rail
- (53) Roof right side rail
- (54) Roof or convertible top

**FLOOR**

- (56) Floor including toe pan
- (57) Floor or console mounted transmission lever, including console
- (58) Parking brake handle
- (59) Foot controls including parking brake

**REAR**

- (60) Backlight (rear window)
- (61) Backlight storage rack, door, etc.
- (62) Other rear object (specify): \_\_\_\_\_

**EXTERIOR OF OCCUPANT'S VEHICLE**

- (65) Hood
- (66) Outside hardware (e.g., outside mirror, antenna)
- (67) Other exterior surface or tires (specify): \_\_\_\_\_

- (68) Unknown exterior objects

**EXTERIOR OF OTHER MOTOR VEHICLE**

- (70) Front bumper
- (71) Hood edge
- (72) Other front of vehicle (specify): \_\_\_\_\_

- (73) Hood
- (74) Hood ornament
- (75) Windshield, roof rail, A-pillar
- (76) Side surface
- (77) Side mirrors
- (78) Other side protrusions (specify): \_\_\_\_\_

- (79) Rear surface
- (80) Undercarriage
- (81) Tires and wheels
- (82) Other exterior of other motor vehicle (specify): \_\_\_\_\_

- (83) Unknown exterior of other motor vehicle

**OTHER VEHICLE OR OBJECT IN THE ENVIRONMENT**

- (84) Ground
- (85) Other vehicle or object (specify): \_\_\_\_\_

- (86) Unknown vehicle or object

**NONCONTACT INJURY**

- (90) Fire in vehicle
- (91) Flying glass
- (92) Other noncontact injury source (specify): \_\_\_\_\_

- (97) Injured, unknown source

**INJURY SOURCE CONFIDENCE LEVEL**

- (1) Certain
- (2) Probable
- (3) Possible
- (8) Unknown

**DIRECT/INDIRECT INJURY**

- (1) Direct contact injury
- (2) Indirect contact injury
- (3) Noncontact injury
- (7) Injured, unknown source

**OCCUPANT INJURY CLASSIFICATION****O.I.C. Body Region**

- (M) Abdomen
- (N) Ankle-foot
- (A) Arm-upper
- (B) Back-thoracolumbar spine
- (C) Chest
- (E) Elbow
- (F) Face
- (R) Forearm
- (H) Head-skull
- (U) Injured, unknown region
- (K) Knee
- (L) Leg-lower
- (Y) Lower limb(s) (whole or unknown part)
- (N) Neck-cervical spine
- (P) Pelvic-hip
- (S) Shoulder
- (T) Thigh
- (Q) Upper limb(s) (whole or unknown part)
- (O) Whole body

**(W) Wrist-hand****Aspect of Injury**

- (A) Anterior-front
- (B) Bilateral (rib fracture only)
- (C) Central
- (I) Inferior-lower
- (U) Injured, unknown aspect
- (L) Left
- (P) Posterior-back
- (R) Right
- (S) Superior-upper
- (W) Whole region

**Lesion**

- (A) Abrasion
- (M) Amputation
- (V) Avulsion
- (B) Burn
- (C) Contusion
- (N) Crush

- (G) Detachment, separation
- (D) Dislocation
- (F) Fracture
- (Z) Fracture and dislocation
- (U) Injured, unknown lesion
- (L) Laceration
- (O) Other
- (P) Perforation, puncture
- (R) Rupture
- (S) Sprain
- (T) Strain
- (E) Total severance, transection

**System/Organ**

- (W) All systems in region
- (A) Arteries-veins
- (B) Brain
- (D) Digestive
- (E) Ears
- (O) Eye
- (H) Heart
- (U) Injured, unknown system

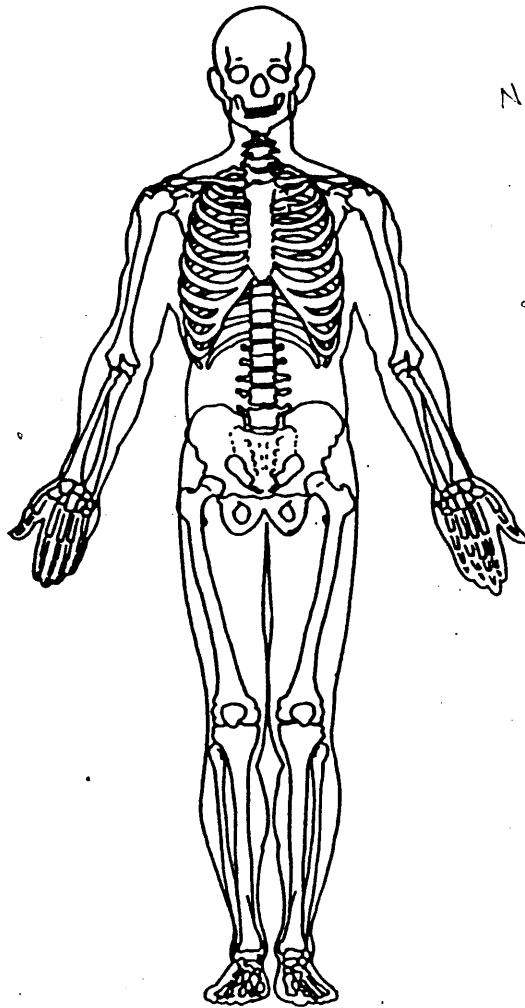
- (I) Integumentary
- (J) Joints
- (K) Kidneys
- (L) Liver
- (M) Muscles
- (N) Nervous system
- (P) Pulmonary-lungs
- (R) Respiratory
- (S) Skeletal
- (C) Spinal cord
- (Q) Spleen
- (T) Thyroid, other endocrine gland
- (G) Urogenital
- (V) Vertebrae

**Abbreviated Injury Scale**

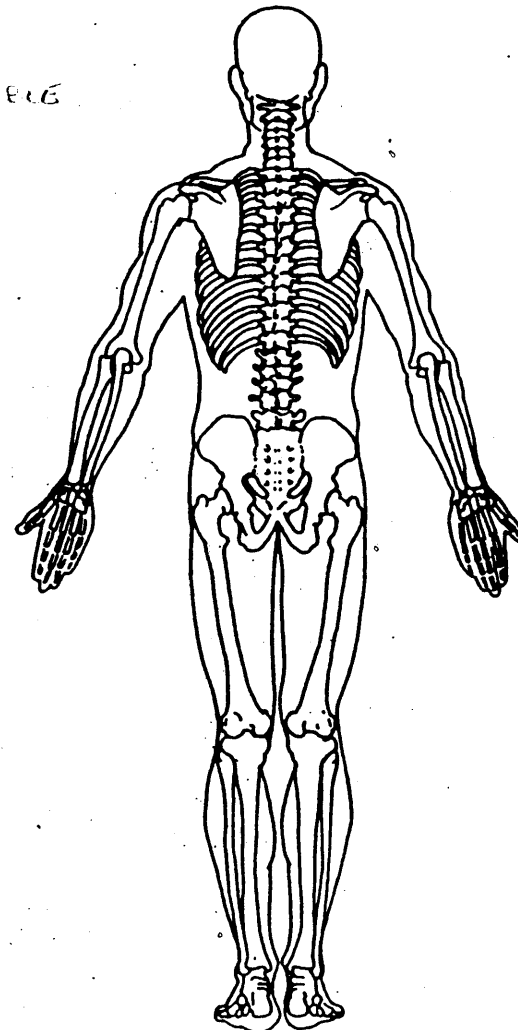
- (1) Minor injury
- (2) Moderate injury
- (3) Serious injury
- (4) Severe injury
- (5) Critical injury
- (6) Maximum (unretrievable)
- (7) Injured, unknown severity

## OFFICIAL INJURY DATA—SKELETAL INJURIES

Indicate the *Location, Lesion, Detail* (size, depth, fracture type, head injury clinical signs and neurological deficits), and *Source* of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)

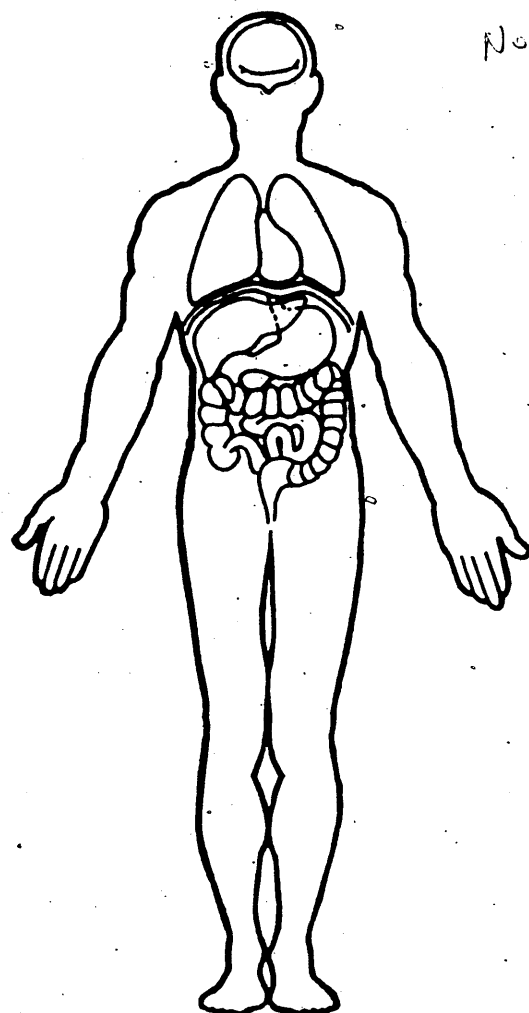


None AVAILABLE

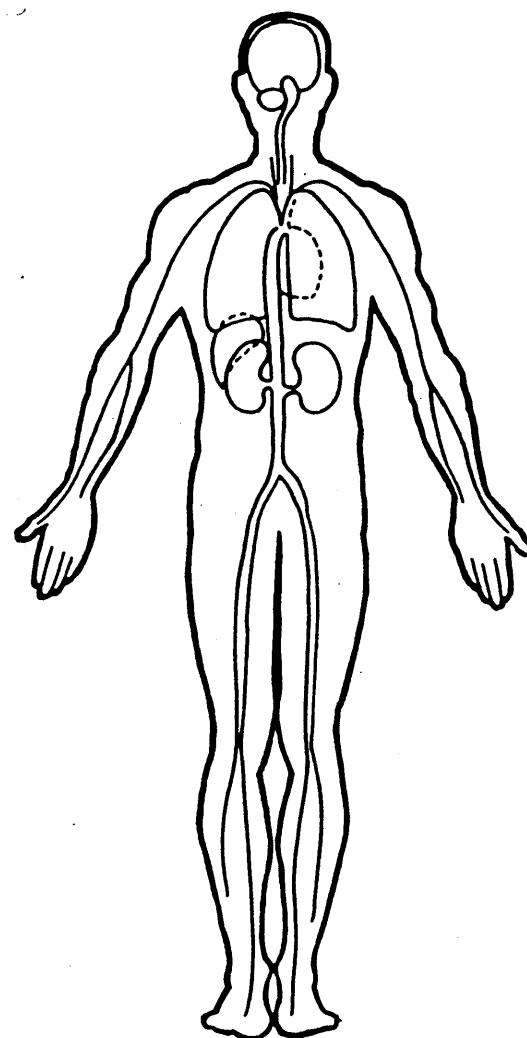


## OFFICIAL INJURY DATA — INTERNAL INJURIES

Indicate the *Location, Lesion, Detail* (size, depth, fracture type, head injury clinical signs and neurological deficits), and *Source* of all injuries indicated by official sources (or from PAR or other unofficial sources if medical records and interviewee data are unavailable.)



None





U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

## INTERVIEW FORM

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

Primary Sampling Unit Number NCSI

Interviewee(s) Role(s) or Name(s) DRIVER

Case Number—Stratum 10-05

Vehicle Number 01

Review the Interview Cue Sheet prior to conducting interview(s) to ensure the acquisition of all pertinent data.

### GENERAL DESCRIPTION OF ACCIDENT SEQUENCE

COMING FROM FRIENDS HOUSE - GOING AROUND  
CURVE - TWO TRUCKS RACING SIDE BY SIDE IN OPPOSITE  
CURVE IN OPPOSITE DIRECTION - HIT HIS BRAKES / LOST  
CONTROL - WENT THROUGH WOODS AND HIT SEVERAL  
TIMES - TRUCKS AND THEN A LARGE ONE

### SPECIFIC QUESTIONS

Key to Researcher: Have you obtained the following through the interviewee(s) description and specific questions?

- ☐ PRE-CRASH, AT IMPACT  
vehicle travel/driver intention  
☐ Direction of travel  
☐ Avoidance maneuvers  
☐ Impact description/orientation

- ☐ Speed estimates (precrash/at  
impact)  
☐ Post-impact trajectory  
☐ Door status (precrash/postcrash)  
☐ Final rest position

- ☐ Previous vehicle damage  
☐ Glazing type  
☐ Vehicle glazing status  
☐ PAR clarifications  
☐ Glove box status

Cargo? No ☒ Yes ☐ Interviewee's Estimated Cargo Weight \_\_\_\_\_

Description of Cargo \_\_\_\_\_

Present Location of Vehicle (if not yet inspected)? \_\_\_\_\_

## National Accident Sampling System—Crashworthiness Data System: Interview Form

Page 2

OCCUPANT DATA				
Enter the occupant's seat position in the first row and complete the column below it using the information from the interviewee(s).				
SEAT POSITION	LEFT FRONT			
AGE/SEX	19			
HEIGHT (IN.)	6 <sup>2</sup>			
WEIGHT (LBS.)	200			
POSTURE	NORMAL			
EJECTED? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				
DESCRIBE THE EJECTION	N/A			
ENTRAPPED? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes				
DESCRIBE ENTRAPMENT	N/A			
TYPE OF RESTRAINT AVAILABLE?	L & S			
HOW WERE THE BELTS WORN?	N/A			
DESCRIBE ANY RESTRAINT FAILURE MODE	NONE			
TYPE OF TREATMENT	DA. NEUT DAY			
DAYS IN HOSPITAL?	0			
NO. OF LOST WORK DAYS?	0			

## National Accident Sampling System—Crashworthiness Data System: Interview Form

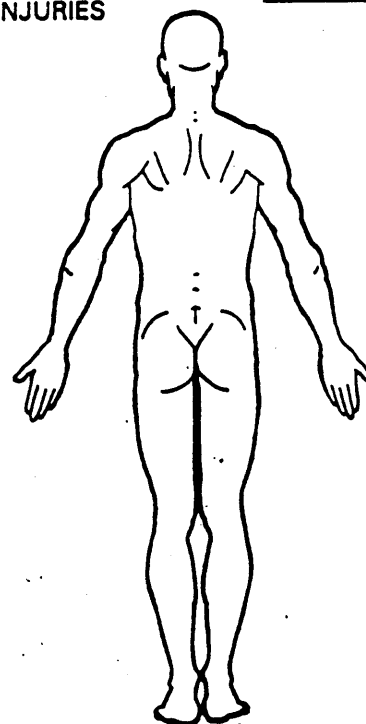
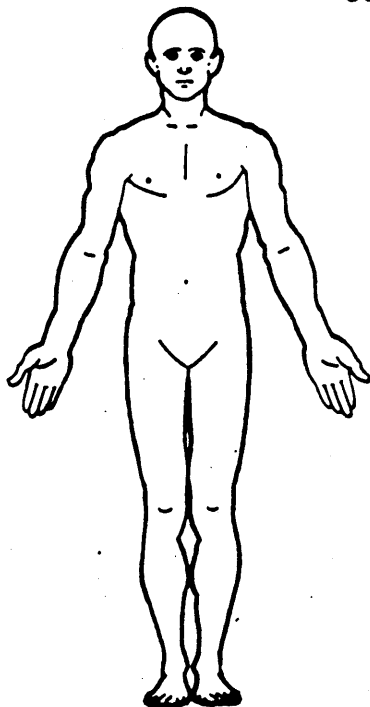
Page 3

PSU Number NCSE Case Number—Stratum 90-08 Vehicle Number 01 Occupant Number 01

## INJURY DATA FROM INTERVIEWEE(S)

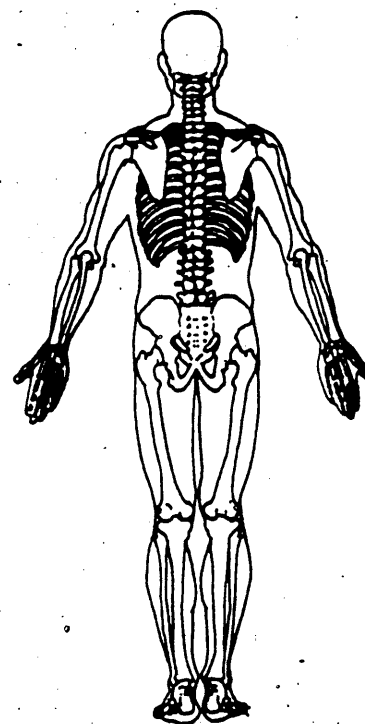
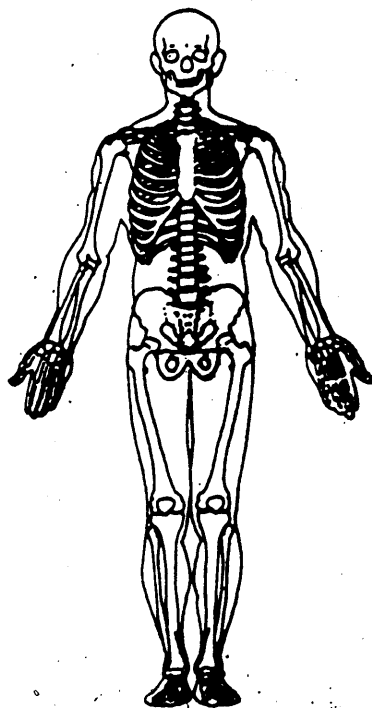
Indicate the Location, Lesion, Detail, and Source of all injuries. Specify interviewee(s): Driver, Passenger

## SOFT TISSUE/INTERNAL INJURIES



SOR. / S-FF

## SKELETAL INJURIES



The space provided on the back of this page may be used to document injuries noted by the interviewee(s).



Appendix C:  
AIRBAG SUPPLEMENT FORMS

BEST AVAILABLE COPY

SYSTEM READINESS LAMP  
(In Instrument Cluster)

PRE-IMPACT LAMP CONDITION

- (1) Functioning/ProvedOut
- (2) Inoperative
- (9) Unknown

1

RIVER'S REPORT OF  
PRE-IMPACT FLASHING

- (00) No Flashing Reported
- (01) Continuous Flashing
- (02) -- >Number of Flashes
- (11)
- (12) Constant Light
- (19) Flashing, Unkn Number
- (88) Not App (system removed)
- (99) Unknown

0 0

PERIOD OF PRE-IMPACT FLASHING

- (0) No Flashing
- (1) Same Day as Impact
- (2) Prior Day
- (3) Prior Two Days
- (4) Prior Week
- (5) Prior Month
- (6) Over One Month
- (9) Unknown

0

POST-IMPACT LAMP CONDITION

- (1) Functioning/ProvedOut
- (2) Inoperative
- (9) Unknown

2

POST-IMPACT FLASHING

- (00) No Flashing
- (01) Continuous Flashing
- (02) -- >Number of Flashes
- (11)
- (12) Constant Light
- (19) Flashing, Unkn Number
- (88) Not Appl (removed)
- (99) Unknown

0 0

AIRBAG VEHICLE  
FIRST HARMFUL EVENT

43

- (01) Fire or explosion
- (02) Immersion
- (03) Gas Inhalation
- (04) Fell from vehicle
- (05) Injured in vehicle
- (06) Other noncollision (specify):
- (07) Overturn
- (08) Jackknife with intraunit damage
- Collision With:
- (09) Pedestrian
- (10) Pedalcyclist
- (11) Railway train
- (12) Animal
- (13) Motor vehicle in transport (same roadway)
- (14) Motor vehicle in transport (other roadway)
- (15) Parked motor vehicle
- (16) Other type nonmotorist (specify):
- (17) Thrown or falling object
- (18) Boulder
- Collision with Fixed Object:
- (20) Building
- (21) Impact attenuator/Crash Cushion
- (22) Bridge pier or abutment
- (23) Bridge parapet end
- (24) Bridge rail
- (25) Guardrail
- (26) Concrete traffic barrier
- (27) Median barrier
- (28) Other longitudinal barrier (specify):
- (29) Highway/Traffic sign post
- (30) Overhead sign support
- (31) Luminaire/Light support
- (32) Utility pole
- (33) Other post, pole, or support (specify):
- (34) Culvert
- (35) Curb
- (36) Ditch
- (37) Embankment-earth
- (38) Embankment-rock, stone or concrete
- (39) Fence (wooden, wire, chain link, etc.)
- (40) Wall (stone, rock, metal, etc.)
- (41) Fire hydrant
- (42) Shrubbery
- (43) Tree
- (44) Other fixed object (specify):
- (45) Pavement surface irregularity (pothole, grooved, grates)
- (99) Unknown

## AIRBAG VEHICLE IMPACT SUMMARY

## VEHICLE ROLE

- (0) Non-collision  
 (1) Striking Unit  
 (2) Struck Unit  
 (3) Both Striking and Struck  
 (9) Unknown

## MANNER OF LEAVING SCENE

- (1) Driven  
 (2) Towed-due to damage  
 (3) Towed - not for damage  
 (4) Towed - details unknown  
 (5) Abandoned  
 (9) Unknown

## NUMBER OF IMPACT EVENTS

- (8) 8 or more, (9) Unknown

## ROLLOVER (0) No Rollover

- (1) First Event  
 (2) Subsequent Event  
 (3) Yes, Unknown Event  
 (9) Unknown

## OVERRIDE/UNDERRIDE

- (1) No over/underride  
 (1) Override - 1st CDC  
 (3) - Other CDC  
 (4) Underride - 1st CDC  
 (6) - Other CDC  
 (9) Unknown

## AIRBAG VEHICLE DAMAGE

- CODES: (1) Yes, DAMAGED  
 (2) No Damage  
 (9) Unknown

## LEFT FRONT FENDER DAMAGE

## RIGHT FRONT FENDER DAMAGE

## CENTER TOP OF GRILLE DAMAGE

## FRONT BUMPER E.A. STATUS: Left

- (1) Normal  
 (2) Extended  
 (3) Partial Compression  
 (4) Complete Compression  
 (5) Not Applicable  
 (9) Unknown

## FIRST AIRBAG VEHICLE IMPACT:

## CONFIGURATION

- (0) Struck Object or Pedestrian  
 (1) Rear-End  
 (2) Head-On  
 (3) Rear-to-Rear  
 (4) Angle  
 (5) Sideswipe - Same Direction  
 (6) Sideswipe-Opposite Direct.  
 (7) NonCollision Fell from Veh  
 (8) NonImpact Deployment  
 (9) Unknown

CDC 1 2 - F L E W - 1OBJECT CONTACTED: SMALL TREES

## PRIMARY/DEPLOYMENT IMPACT:

## EVENT NUMBER

## TOTAL DELTA-Y

## LONGITUDINAL DELTA-Y

## CONFIGURATION

- (0) Struck Object or Pedestrian  
 (1) Rear-End  
 (2) Head-On  
 (3) Rear-to-Rear  
 (4) Angle  
 (5) Sideswipe - Same Direction  
 (6) Sideswipe-Opposite Direct.  
 (7) NonCollision Fell from Veh  
 (8) NonImpact Deployment  
 (9) Unknown

CDC 1 2 - F L E W - 2OBJECT CONTACTED: LARGE TREE

## NOTES:

## AIRBAG SYSTEM DAMAGE

CODES: (1) Yes, Damaged\*  
 (2) No, Intact  
 (8) Not App. (Removed)  
 (9) Unknown

## AIRBAG MODULE

SENSORS: Left Front

Center Front

Right Front

Rear, Cowl

## DIAGNOSTIC MODULE

## WIRING

## KNEE DIVERTER

INDICATION OF DISCONNECTED  
 OR LOOSE ELECTRICAL  
 CONNECTORS

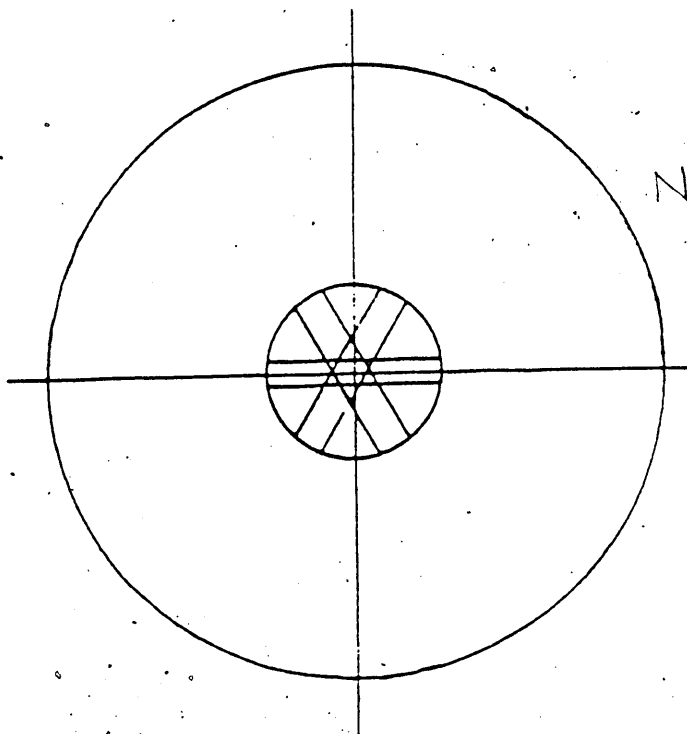
## CONDITION OF DEPLOYED BAG

(1) Bag Intact  
 (2) Split or Torn\*  
 (3) Cut by Object in Impact\*  
 (4) Cut after Accident\*  
 (5) Other (e.g., burned)\*  
 (8) N/A (not deployed)  
 (9) Unknown

\*DESCRIBE System and Bag Damage:

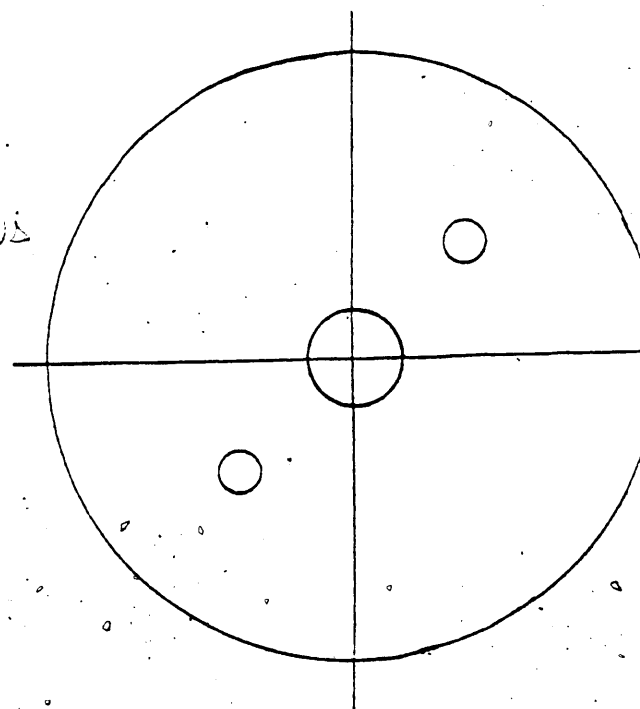
\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

NOTE DAMAGE AND CONTACT MARKS ON AIRBAG DIAGRAMS BELOW:



FRONT

TOP

NONE  
FOUND

BOTTOM

BACK

OCCUPANTS of AIRBAG CAR			
NUMBER OF OCCUPANTS IN VEHICLE (8) 8 or more	<u>1</u>	NOTES:	
NUMBER OF INJURED PERSONS	<u>0</u>		
MAXIMUM AIS IN AIRBAG VEHICLE (0) No Injury (1-6) AIS Severity (7) Injured, Unknown Severity (9) Unknown	<u>0</u>		
DRIVER AGE <u>19</u> SEX <u>M</u>			
NUMBER OF DRIVER INJURIES	<u>0</u>		
SOURCE OF BEST INJURY DATA	<u>7</u>		
(0) Not Injured			
(1) Autopsy w/wo med. records			
(2) Hospital Medical Records			
(3) Emergency Room only			
(4) Private physician, Clinic			
(5) Lay Coroner Report			
(6) EMS Personnel			
(7) Interviewee			
(8) Police			
(9) Unknown			
-----			
MAXIMUM AIS BY BODY REGION			
REGION	MAX AIS		CONTACT
Head/Neck/Face	<u>0</u>		<u>— —</u>
Chest	<u>0</u>	<u>— —</u>	
Abdomen	<u>0</u>	<u>— —</u>	
Leg/Hips	<u>0</u>	<u>— —</u>	
Other (Arms)	<u>0</u>	<u>— —</u>	
DRIVER MAXIMUM	<u>0</u>	<u>— —</u>	
-----			
EJECTION: Extent <u>NONE</u>			
Portal <u>0</u>			

DRIVER BELT USAGE: (1) Used (2) Not Used (9) Unknown 2

Evidence: SOME PREVIOUS USAGE INDICATED BY SCARS  
ON PLATE

DRIVER POSTURE: Any Comments Recorded (1) Yes, (2) No 2

Describe driver's posture and position on seat including specific comments on head, torso, buttocks, legs and feet. Also note hand and arm position. Did driver brace before crash? Describe:

DRIVER FOREIGN OBJECTS: Comments Recorded (1) Yes, (2) No 2

Was driver wearing contact lenses or eyeglasses? Or holding any foreign object at the time of the impact (packages on lap, pipe, food, bottle, cigarette, etc.)? Did any lenses, objects, or jewelry play any role?:

NO FOREIGN OBJECTS

DRIVER COMMENTS: Comments Recorded (1) Yes, (2) No 1

Was the driver aware that the vehicle was equipped with a supplemental restraint system? Did driver offer any comments on smoke, noise, etc.? Did the driver comment on the airbag as a restraint system? Describe:

DRIVER AND HIS KIDDER WERE VERY FAMILIAR WITH  
THE PERFORMANCE OF THE AIRBAG - THEY FEEL IT  
WELcomed HIS INFLATION CONFIDENTLY

PASSENGER-AIRBAG CONTACT (1) Yes, (2) No, (9) Unknown 2

Describe:

Appendix D:  
EDCRASH RESULTS





U.S. Department of Transportation  
National Highway Traffic Safety  
Administration

NATIONAL ACCIDENT SAMPLING SYSTEM  
CRASHWORTHINESS DATA SYSTEM

## CRASHPC PROGRAM SUMMARY

Identifying Title <u>NCSE</u> Primary Sampling Unit	<u>90-08</u> Case No. - Stratum	<u>03</u> Accident Event Sequence No.	<u>90</u> Date (mm dd yy)
CRASHPC Vehicle Identification			
Vehicle 1 <u>1990</u> Year	<u>CHEVROLET</u> Make	<u>GEO STORM</u> Model	<u>1</u> NASS Veh. No.
Vehicle 2 <u>TREE</u> Year			

### GENERAL INFORMATION

VEHICLE 1				VEHICLE 2			
Size				Size			
Weight	<u>2282</u>	+	<u>200</u>	+		+	
	Curb	Occupant(s)	Cargo		Curb	Occupant(s)	Cargo
CDC	<u>1 2 F Z E W 2</u>			CDC			
PDOF	<u>360</u>			PDOF			
Stiffness	<u>1</u>			Stiffness	<u>11</u>		

### SCENE INFORMATION

Rest and Impact Positions <input checked="" type="checkbox"/> No, Go To Damage Information [ ] Yes			
VEHICLE 1		VEHICLE 2	
Rest Position		Rest Position	
X		X	
Y		Y	
PSI		PSI	
Impact Position		Impact Position	
X		X	
Y		Y	
PSI		PSI	
Slip Angle		Slip Angle	

### VEHICLE MOTION

Sustained Contact <input checked="" type="checkbox"/> No [ ] Yes			
VEHICLE 1		VEHICLE 2	
Skidding	[ ] No [ ] Yes	Skidding	[ ] No [ ] Yes
Skidding Stop Before Rest	[ ] No [ ] Yes	Skidding Stop Before Rest	[ ] No [ ] Yes
End-of-Skidding Position		End-of-Skidding Position	
X		X	
Y		Y	
PSI		PSI	
Curved Path	[ ] No [ ] Yes	Curved Path	[ ] No [ ] Yes
Point on Path		Point on Path	
X		X	
Y		Y	
Rotation Direction	[ ] None [ ] CW [ ] CCW	Rotation Direction	[ ] None [ ] CW [ ] CCW
Rotation > 360°	[ ] No [ ] Yes	Rotation > 360°	[ ] No [ ] Yes

## National Accident Sampling System—Crashworthiness Data System: CrashPC Program Summary

**FRICTION INFORMATION**

Coefficient of Friction . . . . .

Rolling Resistance Option . . . . .

## Vehicle 1 Rolling Resistance

LF . . . . . RF . . . . .

LR . . . . . RR . . . . .

## Vehicle 2 Rolling Resistance

LF . . . . . RF . . . . .

LR . . . . . RR . . . . .

**TRAJECTORY INFORMATION**Trajectory Data ☒ No ☐ Yes*If No, Go To Damage Information*

## Vehicle 1 Steer Angles

LF . . . . . RF . . . . .

LR . . . . . RR . . . . .

## Vehicle 2 Steer Angles

LF . . . . . RF . . . . .

LR . . . . . RR . . . . .

Terrain Boundary ☒ No ☐ Yes

## First Point

X . . . . . Y . . . . .

## Second Point

X . . . . . Y . . . . .

Secondary Friction Coefficient . . . . .

**DAMAGE INFORMATION**

## VEHICLE 1

Damage Length 55.00

## Crush Depths

C1 3.25C2 2.50C3 3.25C4 5.00C5 7.50C6 10.25Damage Offset 0.00

## VEHICLE 2

Damage Length . . . . .

## Crush Depths

C1 . . . . .

C2 . . . . .

C3 . . . . .

C4 . . . . .

C5 . . . . .

C6 . . . . .

Damage Offset ± . . . . .

**IF THIS COMMON IMPACT WAS WITH A MOTOR VEHICLE NOT IN TRANSPORT, FILL IN THE INFORMATION BELOW.**

Model Year: . . . . .

Make: . . . . .

Model: . . . . .

VIN: . . . . .

The Weight, CDC, Scene Data and Damage Information for this vehicle should be recorded above.

Complete and ATTACH the appropriate vehicle damage sketch and dimensions to the Form.

## S U M M A R Y     O F     E D C R A S H     R E S U L T S

ENGINEERING DYNAMICS CORPORATION  
NCSI CASE 90-08Date  1990 Time 08:43:59

WARNING MESSAGES: NO MESSAGES

## VEHICLE # 1

IMPACT SPEED MPH		SPEED CHANGE MPH			BASIS OF RESULTS
FWD	LAT	TOTAL	LONG.	LATERAL	
0.0	0.0	0.0	0.0	0.0	SPINOUT TRAJECTORIES AND CONSERVATION OF LINEAR MOMENTUM
0.0	0.0	0.0	0.0	0.0	SPINOUT TRAJECTORIES AND DAMAGE
		13.1	-13.1	0.0	DAMAGE DATA ONLY

## SUMMARY OF DAMAGE DATA

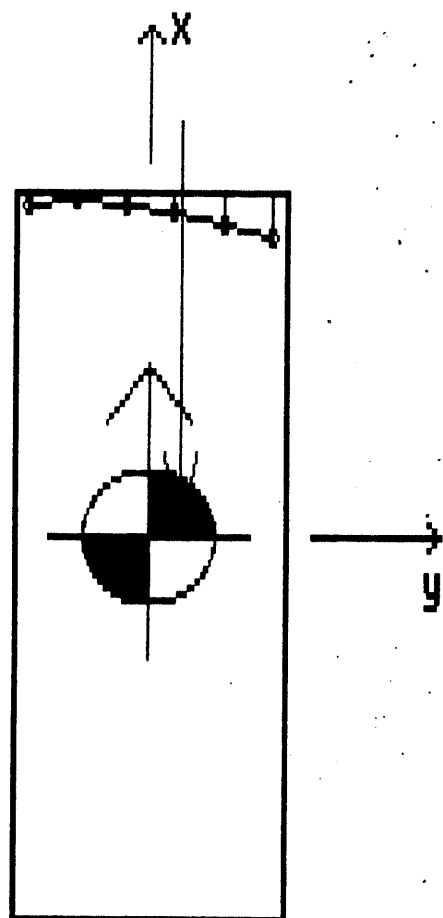
NOTE: '\*\*' indicates default value

	VEHICLE #1	VEHICLE #2	
CLASS (SIZE) CATEGORY	1	11	
WEIGHT	2482.0 LBS.	1000000.0 LBS.	**
DC	12FZEW2	BARRIER	
DAMAGE WIDTH	55.0 IN.	0.0 IN.	**
CRUSH DEPTH 1	3.3 IN.	0.0 IN.	**
CRUSH DEPTH 2	2.5 IN.	0.0 IN.	**
CRUSH DEPTH 3	3.3 IN.	0.0 IN.	**
CRUSH DEPTH 4	5.0 IN.	0.0 IN.	**
CRUSH DEPTH 5	7.5 IN.	0.0 IN.	**
CRUSH DEPTH 6	10.3 IN.	0.0 IN.	**
DAMAGE MIDPOINT OFFSET	0.0 IN.	0.0 IN.	**
DAMAGE ENERGY	14633.3 FT.-LB.	0.0 FT.-LB.	
MAGNITUDE OF PRINCIPAL FORCE	29507.6 LB.	29507.6 LB.	
DIRECTION OF PRINCIPAL FORCE	-0.1 DEG. **	0.0 DEG. **	
MOMENT ARM OF PRINCIPAL FORCE	7.1 IN.	0.0 IN.	
DAMAGE CENTROID	7.0 IN.	0.0 IN.	

## DIMENSIONAL, INERTIAL AND TIRE/ROAD PROPERTIES

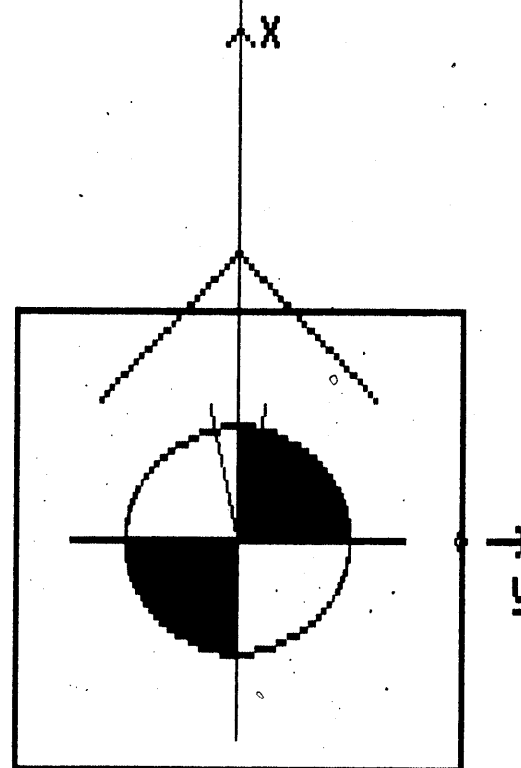
	VEHICLE #1	VEHICLE #2
CG TO FRONT AXLE	45.1 IN.	50.0 IN.
CG TO REAR AXLE	48.1 IN.	50.0 IN.
TRACK WIDTH	51.1 IN.	50.0 IN.
RAW MOMENT OF INERTIA	12885.3 LB-SEC <sup>2</sup> -IN	1000000.0 LB-SEC <sup>2</sup> -IN
MASS	6.4 LB-SEC <sup>2</sup> /IN	1000000.0 LB-SEC <sup>2</sup> /IN
BODY LENGTH FROM CG TO FRONT	76.0 IN.	50.0 IN.
BODY LENGTH FROM CG TO REAR	-83.8 IN.	-50.0 IN.
BODY WIDTH	60.8 IN.	100.0 IN.

# Vehicle No.1

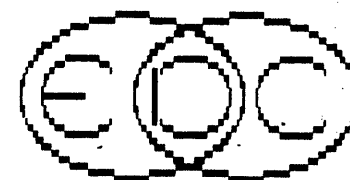


CDC/PDOF: 12FZEW2 -0.1 deg  
Max. Impact Force: 29508 lb

# Vehicle No.2



CDC/PDOF: BARRIER 0.0 deg  
Max. Impact Force: 29508 lb



## EDCRASH Damage Profiles

	Veh #1	Veh #2
Delta-V (mph):		
X	-13.1	-0.0
Y	0.0	0.0
Tot	13.1	0.0

Crush Data (in):		
W	55.0	0.0
D	0.0	0.0
C1	3.3	0.0
C2	2.5	0.0
C3	3.3	0.0
C4	5.0	0.0
C5	7.5	
C6	10.3	